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14 December 1984

USSR REPORT MILITARY AFFAIRS

AVIATION AND COSMONAUTICS

No. 9, September 1984

Except where indicated otherwise in the table of contents the following is a complete translation of the Russian-language monthly journal AVIATSIYA I KOSMONAVTIKA published in Moscow.

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AIR FORCES POLITICAL CHIEF ARTICULATES VANGUARD ROLE OF PARTY MEMBERS

Moscow AVIATSIYA I KOSMONAVTIKA in Russian No 9, Sep 84 (signed to press 3 Aug 84) pp 1-3

[Article by Col Gen Avn L. Batekhin, military council member and chief of the Air Forces Political Directorate: "Vanguard Role of Communists"]

[Text] Public affairs in our country are filled with a wealth of ideological content. The decisions of the April (1984) CPSU Central Committee Plenum, the proceedings of the First Session of the USSR Supreme Soviet, 11th Convocation, the speech by CPSU Central Committee General Secretary Comrade K. U. Chernenko, chairman of the Presidium of the USSR Supreme Soviet, at the party's April Central Committee Plenum, and his addresses at the session of the USSR Supreme Soviet, at a meeting of the CPSU Central Committee Commission on Preparing an Updated Version of the CPSU Program, at a get-together with workers at the Moscow Hammer and Sickle Plant, and at the 5th Armed Forces Conference of Komsomol Organization Secretaries are the focus of attention by Soviet citizens and military personnel, including military aviators. They contain a specific program of action for our country's workers and its armed defenders at the present stage of improving developed socialism and comprehensively define the political, practical-activity, and moral/ethical traits of Communists -- the vanguard of Soviet society.

Our party's strength lies in the activeness and selflessness of its warriors, in their persistent and purposeful campaign to ensure implementation of party decisions, in their personal exemplariness and extremely high demandingness on themselves and others. The proceedings of the June (1983) CPSU Central Committee Plenum and the party Central Committee decree entitled "On Work by the Samarkand Oblast Committee of the Communist Party of Uzbekistan to Implement the Decisions of the 26th CPSU Congress Pertaining to Enhancing the Vanguard Role of Communists and Further Developing Their Activeness in Production and Societal Affairs" stressed that being a Communist today is not only an honor but a great responsibility as well, and the party is seeking to ensure that each and every Communist is a genuine campaigner for the triumph of its great ideals, possesses profound knowledge of, understands and implements the ideals of Marxism-Leninism, and carries out the instructions bequeathed to us by V. I. Lenin: to raise ever higher the status and significance of party member.

The vanguard role of a party authorized representative is important everywhere. It is particularly important in the military. The appeal "Communists, forward!" has gone down in our history as the most powerful spiritual weapon, which enables us to achieve exceptional success on the battlefield and to lead others. One of the documents of the Republic Revolutionary Military Council contains the following: "...In endeavoring to project the chances of victory, officials would sometimes make a more careful count of the number of Communists on hand than the number of cannons and machineguns." This rule remains valid today.

In the conditions of the military to be in the vanguard means to work persistently to implement the decisions of the 26th CPSU Congress and subsequent party Central Committee plenums. It means serving as aggressive party ideological warriors, carrying out job-related duties in an exemplary manner, acting at all times and in all things strictly in accordance with the demands of the CPSU Program, Party Rules, and the principles of the moral code of the builder of communism, displaying initiative and stick-to-itiveness in all things, taking note of all new and progressive innovations and ensuring their practical adoption. The qualities of an aggressive party warrior are displayed on the part of Communists in the military, including in the Air Forces, in the ability ideologically to inspire servicemen to perform with excellent quality the tasks assigned to their unit, to achieve further strengthening of discipline and organization and, in the final analysis, to increase the combat readiness of subunits and units.

We should note that since the 26th CPSU Congress the overwhelming majority of Air Forces political agencies have confidently marched forward in the area of improving indoctrination of party members and have achieved on this foundation a strengthening of the influence of party organizations on all our affairs.

Comprehensive development of the system of party education of Communists and increasing the attention of party agencies toward their assimilation of Lenin's teaching on the party indisputably constitutes the ideological keystone and life-giving foundation of this process. The turn by the Marxist-Leninist training program toward current problems of party organizational development has had a beneficial effect. In recent years the number of persons enrolled in universities of Marxism-Leninism has doubled, with the influx coming particularly from the ranks of leader-Communists.

Political agencies have begun more innovatively utilizing party work experience and know-how amassed by the best party organizations. Implementation of the conclusions of the All-Union Scientific and Practical Conference in Tbilisi and improved dissemination of information about general party experience and know-how have had a positive influence on this.

Ways to increase the vanguard role and responsibility of Communists are presently becoming with a much higher degree of frequency the focus of purposive analysis and the main agenda item at activist meetings, seminars, and conferences. This trend has been validated by practical realities: such meetings are being conducted in a lively and more incisive manner, and discussions at these gatherings have been brought closer to people's actual party activities. And each and every party member performs a self-evaluation

on the basis of a stricter measuring scale -- from the standpoint of conformity between his actions and the demands of the CPSU rules.

On the whole one notes in the Air Forces increasingly extensive utilization of forms of individual indoctrination of CPSU members, especially the presentation of detailed and brief reports, as well as interviews with members. Primary-level organizations are turning to them with increasing frequency. And this is the principal way to make their internal affairs increasingly active. For example, in the party organizations in which officers V. Astashenkov, V. Yatsyshin, V. Bakhmet'yev, S. Shalayev, and I. Lyakhovetskiy serve as secretaries, one out of every three Communists receives in the period between accountability reports a personal evaluation on one of the items pertaining to his party activities. This compels people to approach evaluation of their words and deeds in a more responsible manner and to confirm the prestige and reputation of the party member with concrete actions.

The organizational influence potential by Air Forces party organizations on unit activities through the party members serving in these units has greatly increased since the 26th CPSU Congress, and there has been an increase in the number of party members among flight and technician personnel.

The general livening of the pace of intraparty affairs has had a positive effect on the activities of party members in most units and subunits. More than 70 percent of party members serving in vanguard Air Forces units regularly succeed in meeting rigorous performance standards and confirm their excellent rating in combat and political training, while almost all pilot-Communists and the overwhelming majority of technician-Communists boost their proficiency rating in a prompt and timely manner. 90 percent of the winners of the competition for the title of best in occupational specialty hold party membership.

We are also pleased to note the following fact: the majority of CPSU members interpret their vanguard role more broadly than mere personal exemplariness. This role is manifested most vividly in a continuous improvement of combat readiness qualitative indices in those areas where a party member is working. As a result, in many units and subunits there has been an increase in the effectiveness of fire and missile launchings, precision and accuracy of airborne assault force delivery has increased, and complex aircraft are being successfully mastered. Party members, their intellect, volition, party conscientiousness and firmness stand behind all this.

For example, the men of the unit in which officer M. Khanyukov heads the party committee successfully accomplished all assigned tasks. For many years in a row now they have had no air mishaps or near-mishap incidents. A recent inspection indicated that party members are deeply cognizant of their vanguard role in their outfit. More than 80 percent of party probationary members and full members are excellent-rated in combat and political training, are high proficiency-rated specialists and skilled organizers of the training and indoctrination process.

The high degree of political consciousness and personal example on the part of this unit's Communists played a decisive role in achieving success at a recent

tactical flight exercise. At the initiative of the party committee, supported by the command authorities, a competition was held for best in occupational specialty. A substantive discussion was held at a party committee meeting on precisely what activists should do in the course of the tactical flight exercise and how they could do a job of better influencing their fellow soldiers. Each party member had an assignment and knew his place in the course of preparation for and conduct of the exercise. In adverse weather conditions and in an environment approximating actual combat, the aviators once again demonstrated a high level of professional skill, mastery of their modern equipment and weapons, and firm moral-political and psychological conditioning. The party members inspired all aviation personnel. As a result the outfit accomplished the assigned missions with high marks.

A vivid manifestation of the vanguard role of party members is the mass heroism by Soviet aircrews in the Democratic Republic of Afghanistan, as well as on flights taking them out over the World Ocean, and their courage and skilled actions in an emergency situation.

In short, work connected with implementing the demands of the 26th CPSU Congress and subsequent Central Committee plenums, the 6th Armed Forces Conference of Primary Party Organization Secretaries, and other party guideline documents which emphasize the importance of the vanguard role played by CPSU members, has produced fine results and has enriched us with new experience and know-how in resolving this root problem of party organizational development.

A great deal has been accomplished, but life moves forward. Practical realities are continuously advancing new, even more complex and important issues. Soviet citizens, engaged in peaceful, productive labor, are successfully accomplishing tasks of improving the socialist society and strengthening our homeland's economic and defense might. And we must carry out this constructive work in conditions of intensifying military danger, threat of nuclear war, and acute ideological struggle. The militant forces of imperialism are doing everything in their power to shift the military-strategic balance in their own favor.

We do not want war; we are confirmed opponents of war. However, as USSR Minister of Defense MSU D. F. Ustinov, member of the CPSU Central Committee Politburo, stressed in his address at a Kremlin reception honoring the graduating classes at service academies, we cannot ignore the fact that an unchecked arms race and treachery on the part of the forces of reaction and military militarism oblige us to display unrelenting vigilance. Without overdramatizing the present international situation, but also without understating its complexity, the Communist Party and Soviet Government are constantly concerned with maintaining this country's defense capability at an adequate level, to ensure that no chance circumstance catches us unawares, and demand of military personnel continuous readiness to defend the great achievements of socialism.

Our military forces, including the Air Forces, are provided with everything they require. Upgrading of aircraft and changes in tactics and operational art demand in large measure a new resolution of matters pertaining to combat

and political training, teaching and indoctrination of military aviation personnel. And success in accomplishing assigned missions is determined precisely by the degree to which Communists ensure their vanguard role.

The party's demands pertaining to observance of a unity of word and deed by every party member have increased greatly today. Therefore the difference between the right "to call oneself" and the obligation to "be in fact" a Communist advances strongly to the forefront in the Leninist definition of party-mindedness. Appraising the state of affairs from such a firm position, we must note that in some outfits, for example, party members are content with the fact that a so-called majority of party members constitute a vanguard force and moral/ethical standard, while the Central Committee demands this of every single CPSU member without exception.

Unfortunately some subunits and units continue to lag in combat training and discipline, which results in aircraft mishaps. Indoctrination should be conducted in a more demanding manner with the Communists of these units and subunits, and they should be given specific assistance. The general party approach requires refinement when applied to them: the emphasis should be placed not merely on conducting activities but rather on accomplishing a radical improvement in these activities -- this is the main task of the CPSU member working in a lagging area.

Participation in socialist competition offers a party member a fine opportunity to display his vanguard role. This year competition has been extensively conducted under the slogan "Be alert, in a continuous state of readiness to defend the achievements of socialism!" and on the whole is producing good effect. But alongside positive results, something else is noted in some outfits: the demand articulated at the 26th CPSU Congress calling for increased competitiveness, initiative and innovativeness on the part of competing personnel is not always aggressively implemented. This is in large measure due to deficiencies in the work being done by party organizations with party members as competition leaders, for it is precisely the party organization which should advance from party ranks trailblazers in the campaign to surpass performance standards and to improve the quality of task execution. It is precisely the party organization which is called upon to provide support for the initiators of useful undertakings. Otherwise tried and proven forms of competition are sometimes covered with an incrustation of excessive attention to form with consequent detriment to content, and in certain areas of combat training there is a lack of sensible initiatives which have been brought forth by practical realities and have been tested and proven in a practical manner.

A synthesized expression of the Communist's vanguard role is his conformity with demands imposed on the person who is excellent-rated in combat and political training. Analysis indicates, however, that not all CPSU members fulfill their obligation to become excellent-rated in training and sometimes fail to bear adequate responsibility for this. This is clearly unacceptable. A Communist, particularly one without subordinates under him, should see his vanguard role in ensuring that his practical actions conform to the demands imposed on excellent-rated individuals in combat and political training. The experience of the best units indicates the practicability of this approach.

Ensuring that CPSU members are exemplary in military discipline continues to be a most important demand on party members. Unfortunately not every party organization can state that this matter is given strong focus on the agenda. Practical experience indicates that a change for the better as regards strengthening discipline cannot be achieved by those political agencies and party organizations which do not seriously address the matter of ensuring exemplariness by each and every party member in observing the requirements of military regulations, orders and instructions by the command authorities. A most determined campaign must be waged against this. For us this is the most political of all political issues.

It is evident from the above that command authorities, political agencies, and party organizations still have a great deal to accomplish in order to ensure in a practical manner a vanguard role by party members, as is required by the party Central Committee decree entitled "On the Work Performance of the Samarkand Oblast Committee of the Communist Party of Uzbekistan in the Area of Implementing the Decisions of the 26th CPSU Congress on Enhancing the Vanguard Role of Communists and Development of Their Activeness in Production and Societal Affairs." It is necessary first and foremost to increase the effectiveness of measures being taken to form and shape each and every CPSU member as an active implementer of the party policy line. V. I. Lenin always stressed the educational and practical importance of this quality of the genuine party member, demanding creation of an atmosphere in each party primary unit whereby every party member, under all conditions and in all circumstances, could carry out his party policy line, in every possible status and situation. In order to accomplish this, it is necessary to know the party line to the letter and to be able intelligently to interpret it as applied to the missions of one's outfit.

The requirements on the job-related and political qualities of party members find specific expression in the CPSU Rules. They help party members more fully perceive their great personal responsibility for implementation of party policy and help them grasp their place and role in accomplishing the tasks of building communism and defending the socialist society. Their essence is expressed in a party member, regardless of where he is employed, being a genuine political warrior, an active builder of a Communist society in our country, and a defender of its interests.

Some of the principal basic duties of party members include clarity of ideological and moral/ethical position and active participation in political education of the masses. As we know, requirements in this area are growing swiftly. They are defined by the decisions of the 26th CPSU Congress and the June (1983) party Central Committee Plenum. These demands apply first and foremost to raising the level of ideological-theoretical training of party members. It is unquestionably rising year by year. The overwhelming majority of CPSU members display profound knowledge of Marxist-Leninist theory, the writings of K. Marx, F. Engels, and V. I. Lenin, party documents, CPSU domestic and foreign policy issues, and carry this knowledge to the masses. But practical realities demand more. Therefore each party organization should in practice become a center of daily ideological activity and ensure that party members carry out the requirements of the CPSU Rules, not in a lip-

service manner but in substance. It should regularly formulate and examine questions pertaining to ideological-theoretical training of party members and arm them with the ideas, conclusions, and appraisals of the CPSU on major issues of theory and policy, military organizational development, and the international situation. It has the duty to wage a persistent campaign against any and all manifestations of bourgeois ideology and alien psychology and to develop an acute sense regarding matters of party member honor and conscience, and a particularly strong feeling of responsibility in party members for the state of affairs in the collective.

Practical experience indicates that wherever the party organization operates in a listless and uninteresting manner, exemplariness and activeness on the part of party members is poor. This is why it is so important to make every effort to increase the significance of intraparty work. The political health of the party organization, the purity and exactingness of intraparty relations in it should be the main concern of the party committee and political section.

It is very important to adopt at all levels a syst be the main concern of the party committee and political section.

It is very important to adopt at all levels a systematic approach to regular, objective, open appraisal of the vanguard role of Communists, for this is the most sensitive barometer of the integrity and militance of the party organization. The experience of the best party organizations indicates that a systematic analysis by the party buro of the activeness and exemplariness of all members of the primary party organization constitutes the principal element of such a system. Conclusions from an analysis are communicated in the form of a briefing report at the next party meeting, with adoption of specific decisions. Party committees and political agencies should see their place in this system. They must also regularly analyze and reach conclusions on evaluation of the vanguard role of party members. Whatever issue is discussed in the party organization, whatever the political section studies in the unit, this evaluation should constitute the primary material and foundation of all conclusions.

Greater attention should also be devoted to improving the practical procedures of party meetings, which are called upon to serve as a school of indoctrination for CPSU members. They should not be turned into an adjunct of the work meeting. Performance evaluations for party members should be based not on purely job performance criteria but on their performance of the duties of a party member, and they should be made to answer not only for personal errors of omission but also according to the highest scale of party demandingness -- by the direct or indirect involvement of a given party member in deficiencies in the work performance of the collective.

This year's forthcoming report and election meetings should be constructed precisely on this foundation. They should be permeated with a spirit of party

integrity and exactingness, strict objectivity and criticalness. The CPSU Central Committee demands creation at all levels of the party structure, without exception, of a well-proportioned, continuously-operating system of accounting and implementation of critical comments by party members stated in the course of the reports and elections.

We should mention in particular the role of party committee and party bureau secretaries. Their maturity, degree of preparation, and competence primarily determine the level of activities of the party organization. We believe that, just as in the past, the most highly-respected individuals, who are totally dedicated to the cause of the party and who are capable of organizing smoothly-running operations within their units, will be elected to party leadership positions.

The principles according to which our party operates proceed in a line of succession from those fundamental principles which were laid down by V. I. Lenin. One of them is formulated as follows: the party is the mind, honor, and conscience of our era. And there is no more honorable task for us than to raise each and every Communist in the Armed Forces to the level of this definition.

The task of practical preparations for the next, 27th CPSU Congress was stated at the April (1984) CPSU Central Committee Plenum and in speeches by CPSU Central Committee General Secretary Comrade K. U. Chernenko, chairman of the Presidium of the USSR Supreme Soviet. This crucial stage demands of us concentration of efforts in key areas of the campaign to increase the combat readiness of Air Forces units and subunits, further improvement in the style, forms and methods of party leadership, and mobilization of the efforts of military units for successful accomplishment of the stated tasks.

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SQUADRON POLITICAL OFFICER PROFILED

Moscow AVIATSIYA I KOSMONAVTIKA in Russian No 9, Sep 84 (signed to press 3 Aug 83) p 4

[Article by Col G. Il'in: "Indoctrinator"]

[Text] The gorge began to narrow. The sharp-edged granite cliffs slowly drew closer, until it was no longer possible to maneuver heading. Only airspeed and altitude. Within seconds the target run would commence. The camelback mountain with the double peak was now in sight. When it came abeam, Kozyrev would push the release button.

Boris Vasil'yevich had no doubt that the mission would be accomplished: he was maintaining a perfect flight configuration, and he also had a good deal of experience. There had been a time, however, when he could not look his friends in the eyes, feeling shame from their sympathetic gaze. Yes, a great deal had changed since those days.

At this moment everything was focused on the main objective: to fly precisely onto the target and deliver his bomb load. He took off safety and placed his thumb on the button. It was time! The aircraft climbed steeply, toward the sun.

The next day, during the training sorties analysis, squadron commander Maj A. Kramarevskiy cited as an example the precision performance of his deputy for political affairs, Maj B. Kozyrev.

The following day the younger pilots would be flying similar missions, and therefore the deputy commander for political affairs, following the established tradition, shared his experience and know-how with them, telling them of the unique features of flying missions over mountain terrain. He analyzed his actions in a simple and easily understandable manner, not concealing deficiencies and embellishing nothing. The aircraft model executed maneuvers in his powerful hands, reproducing a picture of the actual mission for his young audience. And this lively, frank presentation by an experienced pilot was much more useful than some routine methodological devices.

Squadron deputy commander for political affairs Major Kozyrev is respected in the subunit. And it is not because he wears the Order of the Red Banner and

Order of the Red Star, although this alone excites the admiration of any pilot. He is modest and unpretentious. He is always ready to give help. And time and again at such moments he would recall stories told by his war veteran father about how mutual assistance helped the soldiers gain victory in deadly combat. They emulate Boris Vasil'yevich, especially the younger men. There is a great deal they can learn from the major: purposefulness, faithfulness toward and love for his profession, inexhaustible energy and stick-to-itiveness -- qualities which every pilot should possess.

Few people know how the deputy commander for political affairs began his flying career. At the time of his enrollment in service school, Boris failed to pass the medical.

"You have a torn muscle," the chairman of the medical examining board informed him. "You need an operation...."

The normal course of action would be to go home, but the youth displayed strength of character. He secured employment at the school as a furnace attendant, insisted on receiving an operation, and the following year became a cadet at the Barnaul Higher Military Aviation School for Pilots imeni Chief Mar Avn K. A. Vershinin. He earned top grades. He did not think in terms of what subjects could be useful and what ones could not. He was firmly convinced: there are no bad and good, useful and useless subjects. And he proved to be right -- in a line unit all the knowledge he had acquired through persistent labor proved useful.

The aviators are fond of their deputy commander for political affairs -- for his demandingness and strictness, the fact that he is a man of few words and for his businesslike efficiency, his seriousness and responsiveness. When he does speak, he is frank and straightforward, citing facts and examples which cannot be simply dismissed. Kozyrev learned the art of working with others from his first instructors and commanders: Lt V. Utkin, Col A. Babyak, and others. He observed, analyzed, reflected, and compared. After being appointed to the position of political worker, he adopted the following rules for himself: do not raise your voice at subordinates under any circumstances; once you begin something, always finish it; learn to perform the job duties of aviation specialists; learn to fly as proficiently as the best aircraft commanders.

Once the squadron party organization secretary, Capt V. Yeshmyakov, a hard-working and therefore always busy individual, asked him in amazement: "How is it, Boris Vasil'yevich, that you always manage to get your work done?"

"Here is why...", the major pulled from his pocket a small notebook which was somewhat the worse for wear. "This contains my daily work schedule right down to the minute."

Kozyrev has a hard and fast rule: work according to a plan and schedule. He thoroughly and painstakingly thinks through party political work measures, and as a rule he figures things with an eye to the future. This exerts a strong influence on the squadron's qualitative performance indices both in air proficiency and in increasing the subunits's combat readiness. Of course if

one is content to bask in the glow of small successes, these successes of the moment seem larger. But they fail to seduce the deputy commander for political affairs. The main thing is the end result, which can realistically be seen after accomplishing the year's targeted tasks.

Major Kozyrev compares the political worker's job with that of the grain farmer. Planting good seed does not mean that a good crop will be harvested. He must work daily and painstakingly, caring for the planted crop. This is perhaps not an entirely felicitous example, but it is accurate.

He does a great deal of work with young people. Take, for example, Lts A. Konorev, A. Kalunin, and V. Chemerilov. These pilots are capable and diligent, but impatient. They get excited and anxious to commence serious work in the air, by dint of their youth overestimating their own abilities and ignoring the factor of experience. Kozyrev speaks of them with warmth, like a father who knows the capabilities of his sons and is pleased with their enthusiasm, but he does not hasten events, skillfully guiding the young men's enthusiasm toward amassing knowledge. And finally, he gradually draws them into volunteer work. One is working in the Komsomol buro, another on the young officers council, and a third has been appointed operational news sheet editor. The deputy commander for political affairs also gives another reason for his close attention to the younger men: he sees them as the successors to the fine traditions of a vanguard squadron.

A healthy microclimate, cohesiveness, mutual assistance and military comradeship distinguish the squadron in which Maj B. Kozyrev serves. The outfit has achieved this due to joint, purposeful efforts on the part of the commanding officer, party and Komsomol activists. Firm military friendship is the foundation of the successful accomplishments in combat and political training by the entire subunit. One out of every two aviators here is a high proficiency-rating specialist, a highly-proficient warrior, with excellent marks in training. Socialist pledges have been met for the most part, but the enthusiastic pace of the campaign for the title "Best in Occupational Specialty," best crew and best flight is not slackening. A good deal of the credit for this must go to the squadron's deputy commander for political affairs, Maj B. Kozyrev.

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FIGHTER-BOMBERS ATTACK "AGGRESSOR" AIRFIELD

Moscow AVIATSIYA I KOSMONAVTIKA in Russian No 9, Sep 84 (signed to press 3 Aug 84) p 5

[Article, published under the heading "Be Alert, in a Continuous State of Combat Readiness," by Candidate of Military Sciences Col A. Yena: "Bold Attack"]

[Text] The squadron was carefully preparing for a tactical air exercise. The aircraft were to hit an "aggressor" airfield situated at the fighter-bombers' extreme range. Available intelligence on the target was fairly meager: the location of the field proper and the approximate number of aircraft deployed there -- which, incidentally, were dispersed. Thus the conditions of this training sortie maximally approximated actual combat.

After estimating the situation, the commander decided to knock out the objective with sequential strikes by two-aircraft elements hitting several preselected targets.

...The weather was not cooperating on the morning of the mission. The airfield was blanketed in thick fog, but the weather forecasters promised that it would dissipate. And visibility did in fact improve when the sun came up.

The squadron commander gathered flight personnel in the briefing room. He further refined and detailed the mission, and he informed his men that the team of umpires had already taken off for the range.

Flight commander Maj A. Medvedskiy listened closely to the squadron commander's briefing. He went through in his mind the forthcoming mission in accordance with the updated conditions, took notes, and analyzed each element of the mission. Mentally picturing the route segments one after the other, the officer noted that not all items had been thought through completely. For example, what was the best way to bypass "aggressor" troop deployment areas which were heavily defended by air defense weapons, from what direction should they attack the target, considering current weather conditions and the altered time of the strike, and how could they maximally exploit the element of surprise in the current conditions?

Much experience flying a modern fighter-bomber and considerable theoretical training helped Major Medvedskiy come up with answers. The flight commander communicated to his men his final mission execution plan.

When the groundcrews were finished preflighting the aircraft, the pilots inspected them. [Accompanying photograph shows an ordnance-releasing Su-17 "Fitter"] Soon orders came over the public-address system: "Medvedskiy group prepare for departure!"

Quickly climbing into the cockpit, Aleksandr Ivanovich looked to his right. His wingman, Maj V. Karpenko, and the pilots of the second two-aircraft element gave the hand sign indicating they were ready to roll.

Visibility at the airfield had improved appreciably, and the flight was cleared for departure. The deafening roar of turbines shattered the morning quiet. Laconic commands were issued, the fighter-bombers taxied onto the active and, after a short takeoff roll, shot skyward. The wingmen reported reaching position in the formation.

The village designated on the charts as the flight departure point flashed past below them. The time count to the objective started here.

Establishing the preplanned mission configuration, Major Medvedskiy radioed to the command post their current heading and time of IMP [flight departure point] passage. The flight en route across featureless taiga terrain was in itself a test of the pilots' skill and navigation proficiency.

As the aircraft began to approach the point of potential detection by "hostile" radars, the leader brought the flight down to the deck. At the same time the trailing pair increased the forward spacing. This ensured freedom to maneuver. The "line of contact" lay just ahead. From here on they would be flying above "aggressor" forces, which were defended by air defense weapons.

Hugging the deck, the group constantly changed heading. When they had closed to not more than 15 kilometers from the target, Major Medvedskiy turned 90 degrees right, and shortly turned onto his attack course. The wingmen, briefed in advance on the attack scheme, maintained radio silence as they followed the maneuver. The leader then firewalled his throttle and requested from the range officer clearance to attack the target.

The aircraft, in pairs following, appearing to leap upward from beneath the earth, reached the top of their maneuver within seconds and, nosing over, dove toward their preselected targets.

They achieved a maximum element of surprise, due to a well chosen direction of attack, en-route flight at extremely low level, and strict observance of radio discipline. Their rocket fire carpeted the "aggressor" aircraft. The pilots were rewarded for their excellent job by praise from the range officer: "Bold attack!"

The people at the command post had high praise for the results of the first attack run by the flight of fighter-bombers. But the second run, in which the

pilots delivered cannon fire, truly delighted the umpires: the pilots riddled their targets, and Major Medvedskiy literally sliced in half an "aggressor" aircraft with an aimed burst. The general gave high marks to this bold and effective fighter-bomber strike. The flight commander and his fellow pilots were cited for their performance. The range officer immediately radioed the pilots the good news.

Maj A. Medvedskiy, who is presently enrolled at the Air Force Academy imeni Yu. A. Gagarin, still recalls that sortie. One cannot say that it was simply lucky. The flight's successful mission was a result of thorough, painstaking, innovative preparation, detailed study of the route and target, and modeling of the most complex phases of the mission. Aleksandr Ivanovich also developed in his former subordinates Capts V. Aleynikov and G. Moltapar the ability to work with enthusiasm and to go right to the heart of any matter. And there is no doubt whatsoever that, no matter what these young officers' future may be, they will not forget how Major Medvedskiy helped them at the initial stages of their career. His pupils are now themselves leading pairs and flights, executing equally bold attacks.

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AIRCRAFT OVERHAUL DEPOT CHIEF PRAISES SOCIALIST COMPETITION

Moscow AVIATSIYA I KOSMONAVTIKA in Russian No 9, Sep 84 (signed to press 3 Aug 84) pp 6-7

[Article, published under the heading "Implementing the Decisions of the 26th CPSU Congress," by aircraft repair and overhaul enterprise chief Col V. Vasil'chenko and party committee secretary Lt Col V. Chernykh: "Enhancing the Effectiveness of Competition"]

[Text] It was stressed at the April (1984) CPSU Central Committee Plenum that our country has reached a very crucial point in the 11th Five-Year Plan, where even monthly figures are critical. The state of affairs dictates the need for further increasing intensity of work effort at all levels. "...Each of us," stated CPSU Central Committee General Secretary Comrade K. U. Chernenko in his address at the Plenum, "should ensure that we do not slacken the effort. Concern, or even, if you like, alarm over the state plan should not leave us for a single moment."

Such an atmosphere of demandingness, exactingness, and businesslike efficiency has been established among the workforce at our aircraft repair and overhaul enterprise. This year we were the initiators of socialist competition among kindred Air Forces enterprises and appealed to all aircraft repair personnel to engage in competition under the slogan "Work more efficiently and with higher quality, strengthen the defense might of the homeland through shock-work labor!" The Air Forces Military Council and the Central Committee of the Trade Union of Aircraft Industry Workers ratified this initiative.

In response to the decisions of the December (1983) CPSU Central Committee Plenum which call for increasing production efficiency and strengthening plan discipline, our workforce adopted ambitious socialist pledges for the new year: to achieve 1.5 percent above-target labor productivity growth and to reduce production cost an additional 0.6 percent. It was resolved to accomplish the production plan targets in the principal technical-economic indices by 27 December, and to increase production volume by more than 20 percent over last year. The workforce pledged to certify 46 units, assemblies, and plant processes with the plant's seal of quality. The aircraft repair and overhaul workers pledged to save thousands of kilowatt hours of electricity and fuel.

The obligation of the initiators of socialist competition vis-a-vis the aircraft repair and overhaul industry labor force, as well as their ambitious pledges place a particular responsibility on our enterprise's workers, office staff, engineers and technicians and oblige us to work with even greater efficiency. Our workforce views as the principal way to reach the stated objective a fuller and more accelerated adoption of scientific and technological advances, further intensification of production, economical expenditure of all resources, and improvement of work quality.

The party's demands that accomplishment of plan-specified targets constitute the patriotic duty of each and every Soviet citizen, each and every workforce, have become for every worker at our enterprise a focal meaning for their daily life and production activity. Take, for example, the vanguard work teams led by officers O. Onishchenko and G. But'ko, while the party, trade union and Komsomol organizations are headed by comrades L. Oleynik, M. Khodus, V. Sivolvskiy, Ye. Marchuk, F. Gaponyuk, and L. Shestak. The selfless labor of the aircraft repair and overhaul workers makes one confident that they will accomplish their socialist pledges on schedule.

The workforces of the vanguard sections and brigades, led by high proficiency-rated comrades V. Shevchuk, L. Gayvolya, N. Goryainov, and V. Dotsenko march in the vanguard of those in competition. Shock workers of Communist labor and vanguard workers V. Bulavintsev, V. Tkach, M. Belobrovets, V. Klochko, and many others display an example of a conscientious attitude toward their job.

As we know, socialist competition is grounded on people's strong conscientiousness and initiative. The innovativeness of the masses is helping discover and mobilize production reserve potential and helping improve work efficiency and quality. The CPSU Central Committee decree entitled "On Improving the Organization and Practice of Totaling Socialist Competition Results and Rewarding Competition Winners" provided a new impetus to the campaign for increasing effectiveness of competition, for more efficient utilization of production potential, for improving the mechanism of economic management, for adopting brigade forms of organization of labor and labor incentive, and for strengthening labor and work process discipline.

Party organizations play a leading role in accomplishing these critical tasks. Matters connected with increasing the efficiency and effectiveness of competition continuously occupy the attention focus of party members. Stage-by-stage socialist competition results are regularly examined at meetings of the party committee and in party organizations. Party members note positive results, firmly and frankly reveal shortcomings, spell out and implement practical measures to improve the organization and strengthen the mobilizing role of competition. They view their principal tasks as increasing the responsibility of leader-communists for meeting plan-specified targets, study, synthesis, and dissemination of the advanced know-how of the best workers, engineers and technicians, brigades, and sections, ensuring a vanguard role by party members in meeting individual pledges, and improving the procedures of totaling competition results.

I believe that one is correct in stating that all this has become a program of activity by party organizations in the area of enhancing the role of socialist

competition and securing ahead-of-schedule completion of production-plan targets.

The enterprise party organization constantly bears in mind the fact that competition effectiveness depends in large measure on how clearly and precisely the terms of competition are defined, the degree to which those in competition are focused toward achieving high end results and improving production efficiency, and the extent to which these terms promote increased productive activity on the part of workers and employees. Let us take as an example the vanguard workforce headed by officer A. Onishchenko. It has on three occasions been awarded a challenge Red Banner for outstanding success in socialist competition. The leader-communist and the party organization, headed by L. Oleynik, seek new forms of influencing people. Using the method of persuasion and holding labor discipline violators strictly to account, party members set the work pace, display an example of businesslike efficiency in making and meeting pledges, and help lagging individuals. Every member of this workforce is thoroughly familiar with how individual and group socialist pledges are being met and is briefed on the successes of his comrades.

Reports and summaries presented at party meetings by CPSU full members and probationary members are now a regular practice in the work activities of party members. Recently, for example, a report was presented by production foreman V. Smolich on his personal contribution to successful accomplishment of socialist pledges by the workforce. The comrades pointed out his shortcomings and suggested ways to correct them. As a result things began running more smoothly in the section.

Strengthening of responsibility for unity of word and deed was fostered by extensive discussion in the party organization of the proceedings of the December (1983), the special February and April (1984) CPSU Central Committee plenums. Communists regularly analyze progress in meeting socialist pledges, seek new reserve potential and opportunities for improving indoctrination work with personnel, boldly expose, firmly and frankly appraise the slightest manifestations of excessive attention to form with detriment to content and act as management's right-hand man in correcting deficiencies. In particular, the party organization has begun devoting more attention to synthesis and dissemination of the experience and know-how of vanguard workers. Recently the work experience and know-how of top benchworker-mechanics P. Pomyanovskiy, L. Motovil'skiy, and M. Pichalyuk was synthesized and presented in visual agitation materials.

Nor are party members ignoring the matter of enhancing the role played by brigades in socialist competition and indoctrination. The work experience of the best teams, such as an assembly brigade which employs a new form of organization of labor and labor incentive, headed by high category-rating benchworker-assembler S. Matsyuk, is being widely disseminated for this purpose. Sergey Trifonovich is a shock worker of Communist labor and socialist competition winner in the 9th and 10th Five-Year plans. He was awarded the Medal for Labor Valor and the USSR Ministry of Defense Excellent Quality Producer Badge for his exemplary labor and excellent performance results in competition. Comrade Matsyuk devotes a good deal of attention to Communist indoctrination of workers and acts as a worker mentor. CPSU Central

Committee General Secretary Comrade K. U. Chernenko, chairman of the Presidium of the USSR Supreme Soviet, spoke precisely about such individuals in his address at a get-together with the workers at Moscow's Hammer and Sickle Metallurgical Plant: "Cadre workers are not only the backbone of any production operation. They are the pride of our worker class."

The younger workers seek to emulate the veteran. The members of Matsyuk's team are distinguished by thorough competence and a committed interest in achieving success. It is for good reason that they meet all plan-specified targets with excellent quality, having mastered the work operation processes in adjacent groups and sections. There occur no violations of labor discipline on this team, the practice of economic accountability is strengthening, and collectivist relations and initiative are developing. Labor productivity is growing at a faster pace, losses of work time are diminishing, and labor resources are being expended more economically.

Incidentally, we have many brigades whose labor experience and know-how merits dissemination. Today we can legitimately name other work teams which are honorably meeting their pledges and are strengthening the homeland's defense might through their selfless labor. They are headed by high job-category rating comrades V. Lendyak, S. Polozhevets, S. Sen', and others.

For the benefit of what we are trying to accomplish, it is necessary to ensure consistent implementation of those powers with which workforces are invested in conformity with Soviet law. The great reserve potential for increasing effectiveness of socialist competition and its indoctrinational force is contained in a conscientious and aware approach not only to formulation of pledges by also to figuring pledge fulfillment and determining measures of moral and material incentive for winners. Proceeding from this, plant management, party, trade union and Komsomol organizations endeavor fairly to assess the labor contribution of each individual competing and endeavor to prevent leveling in this large and important endeavor. We must admit, however, that sometimes this principle is not applied in full measure. And at times it even happens that individual awards to competition winners for shock-work labor or an efficiency innovation proposal are not presented in a solemn ceremony, as is required by the CPSU Central Committee decree, but are handed out together with one's wages, which naturally diminishes the indoctrinational effect. There is only one conclusion we can draw from the above: people should know what they are being rewarded for and, conversely, what they are being punished for.

Thus the result of the organizational and mass political indoctrination work being conducted at the enterprise is a substantial upsurge in patriotic enthusiasm among military personnel, civilian workers and employees, engineers and technicians and, perhaps most importantly, among youth. We can state without exaggeration that mentorship has played a major role in this. There are currently about 150 youth-mentor workers at the enterprise, and a large percentage of them are party members.

Of course the accomplishments are gratifying, but we know that there still exists undiscovered reserve potential. A good deal still remains to be done in order to correct deficiencies and honorably to meet our ambitious socialist

pledges in the fourth year of the 11th Five-Year Plan. Labor activeness, enthusiasm, and the toilers' profound awareness of the difficult tasks facing them give reason to state that their words will not be at variance with their deeds. Utilizing socialist competition as a powerful means of further increasing production efficiency and strengthening plan and labor discipline, the aircraft repair workers are filled with resolve to strengthen the combat readiness of the Air Forces with fine labor achievements.

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UNIT PARTY COMMITTEES URGED TO HELP STRENGTHEN DISCIPLINE

Moscow AVIATSIYA I KOSMONAVTIKA in Russian No 9, Sep 84 (signed to press 3 Aug 84) pp 8-9

[Article, published under the heading "From Party-Political Work Experience," by Col A. Ryabov: "A Key Issue of Principle"]

[Text] For many years now the military unit in which Lt Col V. Teplov serves as party secretary has been excellent-rated. On the basis of socialist competition results, it was designated the best among Air Forces signal units and entered in the district Honor Book. A high level of combat readiness is maintained, performance of personnel work duties is precisely organized, and exemplary internal order is maintained in its subunits. Hard work by commanders, political workers, party and Komsomol activists forms the basis of the successful accomplishments of this vanguard outfit.

The elected party body handles many agenda items, none of which are of secondary significance. All are important, and all are linked one way or another with increasing combat readiness, strengthening discipline, ideological, military and moral/ethical indoctrination of personnel. Nevertheless I should like to single out the main element in party committee activities.

In his speech at the special February (1984) CPSU Central Committee Plenum, CPSU Central Committee General Secretary K. U. Chernenko noted that the question of organization and order is a key, fundamental issue. The work begun by the party has received universal approval and support. Its beneficial results are also evident in the example of this right-flanker outfit. Its experience indicates that a great deal of painstaking work is required of the party committee, party buro, and party groups in order for this root task of national importance to be specifically reflected in the deeds of each subunit, crew, and each military aviator.

What did the unit's Communists undertake first and foremost in their campaign to strengthen discipline and increase organization and order? First of all the party committee correctly determined its capabilities, clearly delineated its actual sphere of influence, and then specified methods with the aid of which one can efficiently achieve the most stable results.

The party body chose as one of the most important focal areas securement of a high level of ideological and political indoctrination work, increasing its influence on combat training results and strengthening of discipline. Concern with an organic link between this work and practical tasks, with fervent and convincing propaganda permeates all party committee activities. Particular attention is focused on selection of persons for the agitation-propagandist group. The majority are activist Communists, highly proficiency-rated specialists, experts at military affairs. All have a higher education. In its plans and schedules the party committee prescribes regular presentations by volunteer propagandists on a broad range of problems examined by the 26th CPSU Congress and subsequent CPSU Central Committee plenums.

Ideological work is being conducted in an integral link with accomplishing the key tasks of increasing combat readiness, ideological conditioning of personnel, strengthening of discipline, cohesiveness of military units, and instilling strong ethics and morality in military personnel. A deep imprint in the consciousness of aviation personnel is left, for example, by the content-filled, interesting lectures and reports presented by officers A. Shamankov and V. Shinkaruk. A high level of these presentations is ensured by regular oversight over propagandist preparation and detailed discussion of every lecture at a meeting of the agitation and propaganda group. They have firmly adopted the practice of hearing summaries and reports from party members about their propagandist activities. This helps increase responsibility for the assigned task and forces one to analyze one's work thoroughly and demandingly. As we know, attention and concern not only force one to toe the line but also infuse enthusiasm, strength and energy.

Well organized oversight and verification of execution have always been and continue to be a most important component part of the essence of party leadership. The party committee promptly responds to any errors of omission by party members in their job-related duties, especially as regards maintaining continuous combat readiness. One example of this is the party committee's influence on the state of affairs in the subunit in which officer V. Lashenko serves as party organization secretary.

There was a time when movement of vehicles from the motor pool would be delayed, and some crews would fail to meet performance standards in setting up communications gear. Other breaches would also occur. Young officer V. Sardar slackened his efforts at indoctrination and training of his men. All this could not help but cause concern on the part of the members of the party committee. At a party meeting it was decided to instruct activists S. Teplitsyn and V. Veselov to look into the matter and help the subunit's Communists ensure observance of regulations.

It was ascertained that battalion leaders officers R. Karlenko, V. Snikhovskiy, V. Dolgiy and others had relaxed their demandingness on combat commanders, platoon commanders, and crew personnel in charge. Carrying out the party assignment, S. Teplitsyn and V. Veselov thoroughly analyzed how party members were influencing the course of combat and political training. They then formulated recommendations for improving individual indoctrination work with various specialist categories. The commanding officer gave his approval. Some time passed, and party organization secretary V. Lashenko

reported at a meeting of the party committee that deficiencies had been corrected. Prompt and timely intervention by the party committee made it possible not only to rectify the state of affairs in the unit but also to achieve stable results in personnel training.

In the activities of the party committee there are many positive examples of work directly in the company party organizations. Instructive classes are held for secretaries on a regular basis, where they are taught individual forms and methods of party influence on the course of combat training. This is producing good results. In the subunit in which WO V. Korkishko serves as party organization secretary, for example, all Communists have a first-class rating and for many years now have been winners in the competition for the title of best communications operator. All the rest seek to equal their performance. A good deal of the credit for the men's accomplishments goes to the company commander, unit party committee member Capt V. Solomatin, who has a great love of his profession and enthusiastically passes on his own experience and know-how to his subordinates.

The party committee is constantly concerned with ensuring that mutual assistance is arranged in each subunit in mastering combat equipment and weapons. Typical in this regard is the example of work with newly-arrived young officers and young specialists. The newcomers had a good foundation in theory, but they lacked solid skills. On the commander's advice, party bureau secretary Maj N. Poznukhov took the lieutenants under his wing. Training of the young communications personnel was assigned to party members V. Nikolayev and A. Zorin. The process of breaking them in would be discussed each month in the party bureau and at leader personnel conferences. In the final analysis purposeful work by the battalion party organization helped cut almost in half the time required to train young specialists.

The party committee devotes unflagging attention to mobilization of Communists and all personnel for all-out strengthening of military discipline, organization, and order. These matters are handled jointly with the command authorities and unit political workers. Measures aimed at increasing the responsibility of party members for implementation of the demands specified in orders issued by the USSR minister of defense and commander in chief of the Air Forces, military regulations and manuals are regularly discussed at meetings of the party committee.

Instances of breach of military discipline, for example, had been noted for some time in the subunit under the command of party member V. Yakovlev. The party committee instructed party committee members N. Karpov and I. Chuykov to analyze the state of affairs in this subunit. They ascertained that not enough individual indoctrination work was being performed, that some party members were less than firm in evaluating the state of discipline and had lost their sense of responsibility, while the officers and warrant officers had appreciably slackened verification of observance of the daily routine. Volunteer inspectors were sent to the subunit to check company administrative operations and also discovered errors of omission.

The Party committee raised at one of its meetings the question of the vanguard role of party members. A report was presented by the deputy commander for

political affairs, officer B. Gulenkov. The meeting was a stormy one. The party committee members subjected to grave criticism by party members subunit commander V. Yakovlev and party organization secretary M. Dukov, who had slackened oversight over their subordinates and who had not given adequate assistance to company sergeant major WO A. Romanenko in maintaining observance of regulations, and who sometimes would usurp the functions of lower-echelon command personnel.

A resolution was adopted to assist company leaders in organizing political indoctrination work. They were instructed to study the experience and know-how of the party organization of the best subunit, commanded by party member V. Solomatin. On the recommendation of the party committee, the unit commanding officer took steps to improve indoctrination and training of NCOs and to give assistance in company administration. Things are now running normally.

Party members in the unit under discussion are clearly aware that only the first steps have been taken. Hard, earnest work remains to be done, aimed at strengthening discipline, order and organization. This has become the main content of the daily activities of the party committee, of each party organization, and of each and every Communist. Discipline, order and organization continue to remain the paramount conditions for success.

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U.S. PSYCHOLOGICAL WARFARE EFFORTS LAMBASTED

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[Article, published under the heading "At the Fronts of the Ideological Struggle," by Maj V. Roshchupkin: "Sword-Bearers of Psychological Warfare"]

[Text] The foreign policy of the United States, citadel of contemporary imperialism, presents greater danger today to the peoples of the entire world than at any time since the end of World War II.

The sword which the "crusaders" from across the ocean are brandishing at the forces of democracy and progress, at all mankind, is two-edged. It reflects the large-scale U.S. military growth programs, which have the aim of bringing to an end the military-strategic parity between the USSR and the United States, the Warsaw Pact and NATO. The other edge has a sabotage and propaganda function and reflects imperialism's class hatred toward socialism. We are dealing here with large-scale, purposeful subversive ideological influence. As was noted at the June (1983) CPSU Central Committee Plenum, we are dealing with attempts to organize a genuine information-propaganda intervention directed against us. The West is waging loud, hysterical anti-Soviet, anticommunist psychological warfare against the USSR and the nations of the socialist community. This warfare, stressed USSR Minister of Defense MSU D. F. Ustinov, member of the CPSU Central Committee Politburo, is being waged continuously, on a broad scale, purposefully and in a sophisticated manner, utilizing the latest technology and the vilest and most insidious methods.

The following article by Maj V. Roshchupkin, written in response to requests by our readers, discusses this psychological warfare, its arsenal, and tells against whom it is directed.

Psychological warfare, the weapons of which are aimed at the hearts, minds and feelings of millions of people, is an undeclared war. But imperialism is waging such a war with its characteristic anticommunist, anti-Soviet malice,

Continuing the confrontation in the domain of ideology proper (political, philosophical, cultural-aesthetic, and ideological-moral/ethical), imperialist propaganda has selected the public consciousness -- both collective and individual -- as the primary target for ideological attack. The specific features of social psychology are taken into account thereby, and they are counting on human instincts, illusions, hopes, and vestiges of the past in the consciousness of the people of the new world. Our class and ideological adversaries are appealing today not so much to intellect, the logic of human thought process, as to people's feelings, frame of mind, and emotions.

In the broad sense of the term psychological warfare is identified with the overall contest in the spiritual/intellectual domain. Bourgeois theorists frequently view it as an all-purpose instrument with which to influence the entire realm of societal consciousness. With the aid of massive, sophisticated influence brought to bear on people's ideological outlook, feelings, and frame of mind, imperialism figures on undermining the unity and cohesiveness of the nations of the socialist community, destabilizing the situation within this community, and creating an "internal opposition."

The fact is that specialized agencies of an elaborate psychological warfare edifice are operating against every socialist and progressive, developing country. For example, approximately 400 anti-Soviet organizations abroad are conducting subversive operations just against the USSR. The United States Information Agency (USIA) is the headquarters of psychological operations. This is an entire corporation of ideological saboteurs, in which 8,000 staff personnel are engaged in slandering socialism. They print and broadcast lies in 128 different countries, where USIA offices are operating.

Three years ago, in September 1981, the U.S. President signed a directive, loftily titled "Project Truth," which essentially consisted of a doctrine of undeclared ideological and psychological warfare against socialism, and against the USSR in particular.

Every dollar spent on radio propaganda can be more effective against the adversary than 10 dollars spent on arms -- the ideological saboteurs are guided by this thesis. Therefore the people across the ocean are willing to spend lavishly on building new Voice of America radio transmitters and modernizing the network of existing ones. Last year Washington's official radio propaganda agency received 250 million dollars (two and a half times as much as in 1982). Its more than 110 transmitters fill the airwaves with lies for almost 1,000 hours a week, broadcasting in 42 different languages.

Another step was taken along the subversive path of psychological warfare in February 1984. The United States signed an agreement calling for construction of a powerful new Voice of America relay transmitter on Moroccan soil. "Voice" offices were recently opened in Egypt for the purpose of increasing the flow of radio lies into the Soviet Central Asian republics, Afghanistan, and the countries of the Near East. Subversive Radio Free Kabul and Radio Marti commenced broadcasting operations, with the aim of increasing the volume of inflammatory broadcasts beamed into democratic Afghanistan and socialist Cuba.

The no-holds-barred psychological warfare on the airwaves, recently unleashed by Washington's propaganda machine, is closely linked with the subversive activities of U.S. intelligence services. Many campaigns of slander and disinformation are instigated by the principal U.S. spy agency -- the Central Intelligence Agency -- and are conducted by its numerous agents over radio and television, both within the United States and abroad. There has been much evidence in the foreign press indicating that Voice of America's little brother in the field of subversive radio propaganda, Radio Liberty-Radio Free Europe (RS-RSye), is in fact a creature of the U.S. Central Intelligence Agency and is financed by this organization. One can reach a conclusion about the working methods of the employees of this lying spy and propaganda organization from an excerpt taken from an official guide on preparation of political broadcasts: "Invent specific events and facts, since they cannot be verified over the vast territory of the USSR or abroad."

While the subversive Radio Liberty and Radio Free Europe broadcast organization spews slander over the airwaves on CIA orders, Voice of America is an official Washington spokesman, operating on behalf of the U.S. Government. This Washington "voice," however, also fills the airwaves with lies. But after all, that is apparently standard operating procedure across the ocean, if one considers the cynical statement made by former assistant Pentagon chief A. Sylvester: "The government has the right to lie." This kind of "rights" are sometimes openly publicized in "free, democratic" America!

Young people in the socialist countries, military personnel in particular, are an important target of psychological operations mounted by the imperialist poisoners of the airwaves. Direct inflammatory and provocational appeals to unsophisticated individuals are frequent occurrences. The radio propaganda controlled by USIA, CIA and other subversive organizations seeks to convince young listeners of the "pacifism" of the Western way of life, of the justification for "alarm on the part of the United States and NATO" over allegedly occurring "excessive military efforts by the USSR." We must note in this connection that dissemination of the old myth of "Soviet military threat" in dozens of versions is one of the main directional thrusts of the psychological warfare being waged, especially against the general public in the Western countries and the young nations of Asia, Africa, and Latin America.

Not a single day goes by without Western radio and television stations pouring onto the heads of ignorant persons floods of lies about the "aggressiveness" and "military expansion" of the Soviet Union and the Warsaw Pact member nations. Frequently the themes of these fraudulent lies are interwoven with pushing the Pentagon's military programs. For example, when the United States commenced aggressive militarization of space, fabricated lies about Soviet preparations "for space war" flooded the airwaves and the newspapers. And no sooner did the Pentagon begin building up its stockpiles of chemical munitions, a myth was concocted to the effect that the Soviet Union and the Socialist Republic of Vietnam were employing chemical weapons in Afghanistan, Kampuchea and Laos.

...Television carries a report on the unsuccessful launch of a U.S. rocket. Look and listen: the news presentation is objective and even critical! This

is followed by pictures (or a narrated report) of a military parade in Moscow. Striking a dramatic tone of voice, the announcer reports that tanks and missiles were trundled across Red Square. The conclusion? Watch out, the Russians are ahead of us, and our rockets don't work! In order to ward off the "Soviet threat," more money must be spent on arms, in order to "catch up with the Soviets." And the appeal: "Support the antiwar movement, Moscow will thank you!" -- formulated in a Jesuit fashion, is circulated for the purpose of discrediting the antiwar movement in the United States and drumming into the public the totally phony claim that it is "inspired by Moscow."

The "crusaders" across the ocean have recently rolled out the Pentagon's propaganda machine into the forward detachment of sword-bearers of the psychological warfare against socialism. The U.S. Defense Department maintains a staff of at least 4,500 for the purpose of shaping public opinion. The money allocated by the U.S. Congress for these purposes has increased 15-fold since 1960. The U.S. armed forces radio and television service operates about 400 stations in five principal networks. U.S. forces abroad operate 250 large radio broadcast stations and dozens of TV studios.

Their broadcasting is permeated by a spirit of anticommunism and lavish adulation of the so-called American way of life.

American journalist (Dzh. Kheyse) testifies that the Pentagon operates a specialized military training establishment -- an information school. It is located at Fort Benjamin Harrison (in Indiana). Future military psychological warfare specialists, so-called press officers, are taught the finer points of "relations between the military and the community" and techniques of influencing public opinion and people's behavior. In training enrolled personnel, the school devotes particular attention to forming skills in "deliberate distortion of information" and the ability to manipulate information in the class, ideological interests of the present administration in the White House and the Defense Department.

The "crusaders" are today as well gaining "experience" in psychological operations in combat conditions. Reports recently appeared in the foreign press attesting to the fact that Washington is endeavoring to sledgehammer into the minds of other nations a way of thinking and feeling which is to Washington's liking. It is being pounded in to the accompaniment of the deafening bursting of bombs and shells. While U.S. warships and aircraft were shelling and bombing tiny Grenada, specialists from the U.S. Army's 1st "Psychological Operations" Battalion, which took part in the intervention (Lt Col J. Ashworth, commanding officer) were beaming subversive broadcasts via a high-powered shipboard radio transmitter as well as transmitters carried on ground vehicles and helicopters, calling upon the island's population to surrender without a fight to the tender mercies of the aggressor. Cuban citizens who were working on the island were urged to betray their homeland and their international duty.

Lieutenant Colonel Ashworth's men landed on the island on the heels of the paratroopers and Marines and immediately went to work. The Grenadians were

literally flooded with leaflets, placards, and radio broadcasts (from the captured building of the former Radio Free Grenada), lauding the "valiant victors" and their commander in chief, Reagan.

"Psy op" specialists from the 1st Battalion are also "working" on the public in the United States and other Western countries. Scrawling slogans praising "omnipotent" America all over the walls of the surviving buildings, they subsequently show newsmen these faked "messages of gratitude by thankful Grenadians." And the newsmen carry this vile concoction to the cities, towns and villages of the "free world." The example we have cited is one more graphic confirmation of the fact that psychological warfare is being extensively waged today not only against the peoples of the socialist countries and the young independent nations, but also against the general public within the United States itself and its allies.

The proceedings of the 26th CPSU Congress pointed to growing activity on the part of the class enemy's propaganda agencies and increased attempts by the adversary to exert a corrupting influence on the consciousness of Soviet citizens. Waging an aggressive ideological offensive against imperialism, instilling in Soviet citizens, Armed Forces personnel, and all young people moral-political and psychological fortitude, readiness and willingness to oppose any and all acts of ideological sabotage and psychological operations have become even more crucial today.

It is important to anticipate the propaganda actions of the class enemy, continuously to conduct active, aggressive counterpropaganda activities, and to focus particular attention on consistent leveling of well-reasoned criticism of the militaristic course of policy followed by the United States and NATO, to expose thoroughly and in an easily-understandable manner the vicious substance of the ideology and policy of contemporary imperialism, and to reveal the peace-seeking foreign policy and peace initiatives of the CPSU and the Soviet State. The proceedings of the June (1983) and subsequent Central Committee plenums emphasized the need clearly to demonstrate the advantages of the socialist system, the social and spiritual/intellectual achievements of our society, and skillfully to propagandize the Soviet way of life and the party's concern with improving the material and cultural prosperity of Soviet citizens and strengthening this country's security.

A new impetus toward stepping up counterpropaganda work was given by the CPSU Central Committee decree entitled "On the 40th Anniversary of Victory by the Soviet People in the Great Patriotic War of 1941-1945." The party demand to offer determined, well-reasoned resistance and countermeasures to our ideological adversaries and to falsifiers of the history of World War II of every ilk is a long-term task for the warriors of the ideological front.

Solid ideological-political conditioning of each and every Soviet citizen, each and every member of the Armed Forces, and our successes in building socialism and strengthening labor and military discipline -- the subversive actions by the sword-bearers of psychological warfare strike ineffectively against this reliable shield.

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CHANGES IN THIRD-GENERATION FIGHTER TACTICS CONSIDERED

Moscow AVIATSIYA I KOSMONAVTIKA in Russian No 9, Sep 84 (signed to press 3 Aug 84) pp 12-14

[Article, published under the heading "Tactics and Simulation," by Military Pilot 1st Class Col Yu. Kislyakov and Col V. Dubrov: "New Features of Aerial Combat"; first part of multipart article]

[Text] 1. Combat at Medium Range

In conformity with the objective laws of armed combat, new equipment and weapons, as component elements of the material means of warfare, exert decisive influence on the modes of conduct of combat operations. And that which up to a certain point in time was considered quite normal and legitimate may prove to be little effective in new specific conditions, while blind adherence to established principles may become the cause of defeat in combat. This is especially noticeable in the area of air tactics, which respond sensitively to qualitative improvement in equipment and aircraft weaponry.

As the British magazine FLIGHT stated in 1981, the generally accepted points of aerial combat doctrine should be revised in connection with the entry into service of third-generation fighters in the air forces of various countries, aircraft armed with new weapons. In order to avoid being shot down it is no longer sufficient to prevent the adversary from getting into the restricted area of potential attack from the rear hemisphere. Modern missiles are fired from a range in excess of 35 kilometers and from any direction. Their zones of effective employment have expanded, and combat at medium ranges has become all-aspect.

The first attacks into the forward hemisphere were recorded during aerial combat in the Near East. The foreign press, covering events during the 1982 Lebanon conflict, noted that Sparrow medium-range missiles were employed by Israeli F-15 fighters in approximately one third of all recorded attacks. Their effectiveness, however, was acknowledged to be poor. Experts maintain that the reason for this was deficiencies of the utilized semiactive radar homing system, which requires that the target be illuminated by airborne radar right up to missile detonation. Excessively lengthy tracking was at variance with the increased pace of combat, and the attacking aircraft proved to be

vulnerable. It was not possible to fire missiles at several targets at the same time. Therefore the bulk of the burden in aerial combat was assumed by the light F-16 fighters, which carried cannons and infrared-guidance Sidewinder missiles. Contrary to expectations, combat continued to be fought by maneuvering groups of aircraft at close quarters.

Results indicated that the problem of all-aspect air combat is too complex, but it remains on the agenda. The AMRAAM medium-range missiles which are to replace the Sparrow are designed for simultaneous firing at from 6 to 8 air targets (in a special fire-and-forget mode handled by the aircraft's onboard radars), with active guidance in the terminal phase. This will enable the attacking fighter to turn away from the target immediately after firing.

In connection with the forthcoming reweapening of the fighters of the NATO nation air forces, studies and flight experiments are being conducted for the purpose of working out the tactics, combat formations and modes of conduct of combat at medium ranges. Preliminary assumptions that the new elements do not eliminate but only supplement traditional fighter tactics are being confirmed. Therefore tactics are becoming more complex and densely-packed, and are imposing increased demands on aircrew training.

At the same time the new tactics are falling under the old classification. In the British Air Force, for example, they are subdivided into offensive, neutral, and defensive. Only their content is changing, but they are even more dependent on the capabilities of aircraft and weapons. In the final analysis, however, as the magazine FLIGHT emphasizes, the outcome of battle will continue to be determined by the skill and experience of a pilot with a mastery of his aircraft.

Offensive techniques in close-quarters maneuver-rich combat were designed for a high thrust-to-weight ratio aircraft in order to get behind his opponent. The excess energy would be expended on closing and maneuver, which culminated with firing short-range missiles or cannon fire. The "fast double disk" and "slow double disk" were the most widely employed devices in the British Air Force. The first involved a hammerhead stall during pursuit of an adversary in a turn. A considerable store of energy was retained during climb, and a decrease in airspeed made it possible to alter heading more quickly and to attack the target from a rear low position. In the U.S. Air Force similar devices were called "high speed" and "low speed."

Commencement and termination of offensive action short of the point of establishment of visual contact with the adversary is considered a typical feature of combat at medium range. Vigorous maneuver to get behind the adversary is not involved. The pilot gets his bearings from the target's return on his airborne radar (or other scan device indicators). As soon as the target blip and identification symbol appeared on the screen, the pilot would make his decision and engage. If there were no target blip or it was obscured against the background of adversary-generated jamming clutter, the decision would be postponed.

As some aviation experts put it, modern aerial combat commences with a contest between electronic equipment: whose radar "sees" further, whose IFF

[identification friend or foe] system does a better job of identification. The pilot merely assists the equipment, setting the radar operating modes or manually adjusting the elevation antenna. It is believed that onboard systems can provide signals indicating attack readiness -- readiness to execute the prepared engagement scenario. Computer information processing and analysis make it possible to determine and communicate to the pilot the degree of threat presented by each detected target. Electronic gear prompts the decision and indicates what weapon should be employed in a given instance.

As AERONAUTICAL JOURNAL states, capability to utilize weapons and electronic equipment with better performance characteristics than those of the adversary or the availability of early-warning assets makes it possible to beat the adversary in detection and attack as well as to neutralize the effect of the adversary's numerical superiority. As experience indicated, he who is first to spot the adversary initiates medium-range air combat (transitions to closing). It is difficult to compensate for the difficulties which arise due to a small surveillance (search) zone by increasing the number of engaging fighters. Therefore aircraft carrying new radars and increased-range missiles do not cluster in close-packed formations but spread out in depth and altitude, especially just prior to initiation of closing.

Semifullscale simulation or modeling and flight experiments involving modern fighter aircraft possessing approximately identical lethal capabilities indicated that in this instance success is determined by a better (corresponding to the situation) disposition of forces and more skilled tactics. We know that the search zone shrinks to approximately half with look-down radar scan (discrimination of targets against the earth surface background). Therefore if it is necessary to remain undetected, it is more advantageous to commence closing at low level. When climbing, however, one must approach closer to the target, since missile energy capabilities are diminished (authorized release range is reduced).

According to foreign observers, the tactic based on a climbing attack from low-level ambush (ground clutter-obscured zone in the adversary's radar coverage area) was extensively employed in the most recent Lebanon conflict. Mountain ranges, which created blind areas in ground radar surveillance coverage, helped conceal an F-15 aircraft in "attack position." After reaching medium altitude, undetected closing was ensured by passive or active jamming originating from another aircraft.

In contrast to close-quarters combat, where close-range weapons are employed from the rear hemisphere, at medium range head-on closing is considered to be the most advantageous direction of attack, whereby maximum missile release range is attained (as a consequence of high closing speeds). The advantages offered by a long-range weapon with a semiactive radar guidance system are lost as aspect increases. Attack from the rear becomes tactically disadvantageous, since release ranges are closer to minimum.

Of course neither adversary wants to end up in the position of the attacked, including from medium range. The possibility of being attacked arises from a lack of information (threat warning), tactical miscalculations and errors by the pilot or control facility in estimating the situation, and loss of

alertness. Mistakes can also be caused by falling for a feint or decoy move. As was indicated by combat experience in the Near East, falling for an adversary's challenge to pursue by means of a decoy maneuver remains a valid factor. The decoy group, the role of which would be assigned to reconnaissance aircraft, would lure off an interceptor and draw him into a head-on attack from below.

Thus in order to enhance the potential results of a medium-range attack, it is supported by auxiliary means. Having synthesized the results of actual combat engagements, experts maintain that a very important role for a fighter is played by target designation from an airborne command post, which conducts search to a considerably greater depth. In addition, the success of an attack depends directly on the aid of a specialized electronic countermeasures aircraft, which jams at the moment of initiation of closing and ensures concealment.

Fighter tactics become more complicated as new elements which must operate synchronously are added to the battle environment. There are fewer offensive tactics in medium-range combat, however, than in a close-range maneuver engagement. During the two phases -- closing and attack -- the aircraft should proceed along a straight line or in a trajectory close to a straight line, in order to keep the target within a relatively narrow missile radar homing head lockon zone. Foreign military experts maintain that on the whole successful employment of offensive tactics in medium-range combat depends on the range at which an air target is detected by airborne radar and its resistance to jamming, authorized release range and "all-aspect capability" of the missiles employed, degree of completeness and effectiveness of combat support of the attack, level of tactical proficiency of the pilot and the command post team.

In contrast to offensive tactics, neutral tactics are aimed at preventing the adversary from fully exploiting his attack capabilities, whereby one's own aggressiveness is limited in close-range maneuver combat. The "scissors" is the most indicative neutralization tactic: the adversaries periodically draw closer and move apart, preventing one another from entering a potential attack zone, that is, from taking up a position suitable for firing. But each successive movement toward one another results in an attendant loss of energy. Ultimately the fighters, assuming identical maneuver capabilities, lose the capability to continue engagement.

In combat at medium range neutral tactics occur while escorting bombers -- one of a fighter's principal missions. Escort groups execute delaying actions, aimed at preventing hostile interceptors from reaching the escorted bomber force. Preemptive attack to prevent attack or barrage fire are not always possible in this situation, since the overall flight formation is disrupted, and creation of a fire barrier with a limited number of costly missiles is too wasteful. Therefore special importance in these conditions is attached to "neutralization" tactics.

U.S. fighters gained some experience in employing neutral tactics while escorting strike groups during the air war in Vietnam. Having sustained heavy losses from North Vietnamese air defense, U.S. Air Force authorities demanded

that every combat aircraft be equipped with jamming gear. Low-powered airborne jamming transmitters provided concealment to composite formations. It was difficult to isolate a target return against the large jamming return, and interceptor missile attacks employing airborne radar would be thwarted due to the impossibility of locking onto the target. A search for new tactics began, one of which involved closing at high speed to close range.

Protecting a bomber formation with "their own" jamming did not give the fighter escort even limited freedom of action. In fact they were pinned down to an even greater degree, since forward and lateral spacings between aircraft were reduced in order to obtain more reliable jamming concealment. Therefore the strike group direct escort mode remained the most complicated, in spite of development of neutralization tactics. Some experts concluded that the bomber pilots should become more involved in executing these tactics. U.S. F-111A tactical strike aircraft, for example, which were combat-tested in Vietnam, did not require escort. Terrain-following nap-of-the-earth flight (mainly at night) became the principal means of preventing detection. To achieve this capability, aircraft were equipped with an additional radar and new avionics.

According to a report in the magazine AVIATION WEEK, fighter capabilities to perform a second principal mission -- protection of troops and ground installations -- were studied on a controllable simulation or modeling system. They simulated an attack by a composite group of "aggressor" aircraft on an airfield defended by F-15 and F-16 fighters armed with future-adoption AMRAAM medium-range missiles. The group of defending fighters was inferior in numbers to the "aggressor" and sought primarily to attack his bombers, utilizing their best fire-delivery capabilities. It was determined in the course of the study that it is rather difficult to fire missiles from maximum calculated range. Following were the principal reasons for firing delays: tactics by an "aggressor" operating in nonstandard combat formations; effectiveness of neutral tactics -- employment of intensive jamming, due to which the F-15 and F-16 pilots could not accurately determine range to target; impossibility of reliable target identification with the aid of onboard systems. As a result the closing phase became excessively drawn out due to hindering factors ("aggressor" neutral tactics), the aircraft was forced to approach to close range, and lockon was thwarted. In a number of instances aircraft approached the "aggressor" to visual detection range, which meant initiation of close-range combat. All the advantages offered by radar with automatic lockon and tracking mode, as well as medium-range missiles with active guidance were lost.

In the experts' opinion, on the whole the effectiveness of neutral tactics in air combat at medium range depends on the availability of excellent performance characteristics and skilled utilization of electronic countermeasures gear, intelligent disposition of fighter forces (formation) and disposition adjustment in the various flight phases, reliability and effective range of warning systems which alert fighters to the presence and intentions of hostile aircraft.

Defensive tactics differ from neutral tactics in the fact that they are employed when an attack threat is determined (detection of closing hostile aircraft) and are aimed at preventing an aircraft from entering or at removing

an aircraft from a zone of potential enemy employment of airborne weapons. In close air combat the nature of defensive actions (content of evasion tactics) depends almost entirely on visual detection range and aspect of the attacking aircraft. At a range to adversary close to open-fire distance, maneuver is executed at maximum possible angular velocity, for the sake of which kinetic energy (airspeed) is sacrificed. If the adversary is spotted at greater range, a coordinated turn, without deceleration and loss of energy, is executed. This is important in order to seize the initiative and subsequently to turn to the attack, if maneuverability characteristics and thrust-to-weight ratio permit.

In medium-range combat the transition to closing takes place at a range of 70-80 kilometers. If both adversaries possess equal weapon capabilities, response but not delayed offensive action is considered to be the best defense, with the possibility of altitude maneuver and formation redistribution. Air combat becomes a meeting engagement and thus opens up a new page in fighter tactics. When one of the adversaries possesses both a qualitative (in detection coverage and fire) and positional (forward head-on) advantage, the other undertakes high-speed maneuvers to get out of his detection or lockon zone. Combat experience in the Near East, for example, indicated that a vigorous groundward dive would force the adversary to switch his radar to lower-hemisphere scan mode, which would sharply reduce target detection and tracking range. Seizure of the initiative and shift from defense to offense in such combat is highly doubtful, since after lockon is lost or the adversary is no longer being painted by airborne radar, everything starts from the beginning -- with the search phase.

On the whole military aviation experts view combat at medium range primarily as an offensive or meeting engagement. Defense, just as during neutralization, is based chiefly on employment of warning and ECM devices. An important role is also assigned to combat formation disposition according to new configurations, exploitation of the "protective" properties of the terrain, teamwork and coordination with antiaircraft weapons during combat over friendly territory. One's attention is drawn to the fact that termination (impossibility of continuing) of an engagement at medium range does not mean cessation of air combat altogether. The adversaries may shift to close combat, where other weapons and other tactics are employed. In addition, the paucity of amassed experience for the time being prevents one from reaching any encompassing conclusions. The stage of search for practical tactics, the points of which are usually written into the manuals, is still continuing. The next generation of weapons or equipment upgrading will inevitably lead to new changes. (To be continued)

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SPACECRAFT LASER PROPULSION SCHEME DESCRIBED

Moscow AVIATSIYA I KOSMONAVTIKA in Russian No 9, Sep 84 (signed to press 3 Aug 84) p 14

[Article, published under the heading "Briefs": "Laser Motor"]

[Text] The operating principle of a laser jet motor (LRD) is simple. The working medium (water can be used) is fed from a tank into an absorption chamber. Here it is heated to a very high temperature by a finely-focused laser beam. A small quantity of gaseous additive would be injected into the flow in order to increase the efficiency of the process. High-temperature plasma, forming in the heating zone, is expelled through a supersonic nozzle at high velocity. This generates reactive thrust. Calculations indicate that the specific impulse of an LRD may reach 1,000-2,000 seconds. For the sake of comparison we might note that it does not exceed 455 seconds in liquid-propellant rocket engines burning oxygen-hydrogen propellant.

The flight of a transport space vehicle powered by an LRD would follow a preprogrammed trajectory, while the requisite alignment of radiation energy transmitter and receiver will be accomplished by a tracking system with feedback.

There are two possible LRD configurations: single-opening, and dual-opening. In the former the laser beam enters the absorption chamber via the nozzle. This is the simplest design. In addition, it does not involve any restrictions regarding plasma stability. In the second configuration the laser beam enters the motor via a lateral aperture and strikes a focusing mirror, which deflects it and directs it into the absorption chamber via a supersonic aerodynamic window.

A satellite solar generator unit can be used as primary power source for transport space vehicles propelled by LRD. Scientists believe that spaceborne laser units rather than terrestrial installations should be employed to transfer payloads from low earth orbit into a geostationary orbit, in order to avoid substantial energy losses caused by beam passage through the atmosphere.

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WORLD WAR II NIGHT BOMBING MISSION RECALLED

Moscow AVIATSIYA I KOSMONAVTIKA in Russian No 9, Sep 84 (signed to press 3 Aug 84) p 15

[Article, published under the heading "Years, People, Deeds," by former aircraft gunner and radio operator Gds Sr Sgt (Res) B. Ul'yanov: "Night Mission"]

[Text] Four decades have passed since those unforgettable days in the summer of 1944 when Soviet troops were continuing their victorious offensive. The 4th Guards Bomber Regiment, in which I served as an aerial gunner and radio operator, took part in these battles. I can still vividly recall savage clashes with the hated foe, battlefront airfields, a sky filled with the puffs of antiaircraft shellbursts, and I can see my fellow soldiers who are dear to my heart.

Savage fighting was in progress, and we aviators had plenty to do. Our regiment was seeking to impede the concentration of enemy ground forces on the main axes of advance of the Soviet forces. At that time the Hitlerites began utilizing the cover of darkness for maneuvering their subunits. We had to prevent this, and our regiment began flying night missions. This was a rather difficult task for the Pe-2 aircrews, since the regiment was based at a field airstrip. Therefore as a rule the mission would be assigned to the most experienced crews.

One day officers I. Borisenko and V. Ivanov were summoned to the command post. The regimental commander, Gds Maj V. Morozov, assigned them a mission: with the onset of darkness the crew of Guards Senior Lieutenant Borisenko, of which I was a member, was to find and bomb an enemy troop train on the Ostrov-Pskov rail line; the crew of Guards Senior Lieutenant Ivanov was to hit an enemy airfield near Priyekule and demolish the runway.

The aircraft navigators, Gds Lts P. Platonov and P. Kletskiy, laid out on their charts the routes of the forthcoming combat sorties. Gds 1st Sgt I. Obukhov, the gunner-radio operator on the other crew, and I, obtaining a radio briefing from the regimental signal officer, Sr Lt I. Gavrilov, also proceeded to prepare for this crucial mission.

We took off at the designated time. We reached the objective area without incident. Searchlight beams probed the night sky over Ostrov; one of them glanced across our aircraft. The pilot executed evasive maneuvers, but the searchlight beam held the bomber firmly in its grasp. It was joined by a second beam. Now we could see nothing beyond the interior of the aircraft.

Such a brightly-illuminated target is easy pickings for antiaircraft gunners and night fighters. Antiaircraft shellbursts proceeded to flash nearby. Well, I think to myself, if I do not "extinguish" these searchlights immediately, we have had it. Without losing a second, I swung my heavy-caliber machinegun in the direction of a searchlight, took aim, squeezed the trigger and, to my great joy, the beam disappeared. The aircraft commander's voice immediately came over the intercom: "Attaboy, Boris, get the other one!"

I again took aim, squeezed off a burst, and our aircraft was suddenly wreathed in impenetrable blackness. Our searchlight-blinded eyes could make out the ground only from the antiaircraft gun flashes. Gradually our night vision returned.

We reached the rail line right on schedule. In the moonlight the steel rails were clearly visible from above. We proceeded to look for the target. We soon spotted it. A break in the reflected gleam from the rails indicated that an enemy troop train was standing on that spot.

Borisenko flew a banked, descending turn, and we saw that the target was indeed below us. Suddenly we caught sight of a heavy shower of sparks at the very end of the dark stretch of track. What was it?

"The locomotive has uncoupled and is pulling away from the consist, hoping to divert us," the pilot explained.

The enemy's stratagem failed. Our aircraft attacked. We released bombs and fired our heavy-caliber machineguns: Guards Senior Lieutenant Borisenko fired his upon entry into the dive, and I fired mine on pullout. We flew one pass, another.... The spot where the train stood was in flames. Now we could head for home.

It was difficult to evaluate the results of our night mission: at the time we lacked appropriate equipment. But on the basis of the number of fires, specialists fairly accurately determined the quantity of destroyed enemy equipment. According to all indications, on that sortie we destroyed with bombs an enemy train carrying men and equipment and demolished the railbed.

On the flight line 1st Squadron ground crew technicians and mechanics Gds Tech-Lt P. Shashkin, Gds 1st Sgt V. Bulovkin, P. Ovsyannikov, and I. Sevast'yanikhin, led by Gds Sr Tech-Lt A. Kotov and Gds Engr-Capt V. Yartsev, inspected our aircraft and found dozens of holes. They set right to work. It was an immense job. But by morning our "peshka" [a play on words: "peshka" means pawn and was used as a slang term of identification for the Petlyakov Pe-2 bomber] was ready to go out again.

Guards Senior Lieutenant Ivanov's crew also returned safely. The crew members related to us that they had appeared over the enemy airfield during flight operations. The resourceful Ivanov, desynchronizing his engines, simulated the rough, howling sound of a Junkers and entered the landing pattern. The Hitlerites took the aircraft to be one of their own and turned on the runway lights. Kletskiy put a string of 100-kilogram high-explosive bombs into it.

This was an outstanding aircrew. They flew the most crucial, difficult and dangerous missions, including reconnaissance. Gds Sr Lt V. Ivanov was subsequently awarded the title Hero of the Soviet Union.

Gds Lt Pavel Kletskiy celebrated Victory Day with us. But he soon took seriously ill and died. Gds 1st Sgt Ivan Obukhov, a cheerful individual with a kind, friendly smile, who had flown with this crew during the entire war, also died before his time.

Many fighting comrades in arms either did not return from the war or later died from their wounds. Memorials are erected in their honor, and naval ships, trains, and Pioneer troops are named after them. Songs are written about them. For this reason they will live forever in the memory of a grateful posterity.

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COMMUNICATIONS PERSONNEL WORK TO IMPROVE PERFORMANCE LEVEL

Moscow AVIATSIYA I KOSMONAVTIKA in Russian No 9, Sep 84 (signed to press 3 Aug 84) pp 16-17

[Interview, published under the heading "From Party-Political Work Experience," with unit deputy commander for political affairs Lt Col V. Ul'yanov by AVIATSIYA I KOSMONAVTIKA correspondent: "The Strength of the Party Committee Lies in Activist Support"]

[Text] The training year is approaching an end. Aviation communications personnel are working with success along with all other military personnel. Our correspondent met with Lt Col V. Ul'yanov, deputy commander for political affairs of an excellent-rated unit, and asked him to reply to questions of interest to the editors.

[Question] Tell us, Valeriy Timofeyevich, how training and competition is progressing in your outfit, and about the campaign for stable performance results in combat and political training.

[Answer] Competing under the slogan "Be alert, in a state of continuous readiness to defend the achievements of socialism!", signal subunit personnel are strengthening organization and discipline, are increasing their technical proficiency, are mastering related occupational specialties, and are vigilantly standing alert duty. In response to the CPSU Central Committee decree entitled "On the 40th Anniversary of the Victory of the Soviet People in the Great Patriotic War of 1941-1945," personnel have resolved to honor this important date with excellent performance results in training and to maintain the title of excellent-rated outfit. The men are being given considerable assistance by the members of the party committee and party bureaus, who are called upon to support and adopt all new and advanced innovations in methodology of training and indoctrinating military personnel and to lead the men's creative enthusiasm. They are constantly looking into the training and indoctrination process, encouraging Komsomol members through personal example to achieve substantial performance results in providing the command authorities with stable communications. Activists are giving specific assistance to commanders and political workers in mobilizing the men for the campaign for high, stable training performance results. One can cite a great many examples of skilled, purposeful work by party activists, directed toward

boosting the combat proficiency of officers, warrant officers, NCOs, and enlisted personnel. In the past we did not have very many high proficiency-rating specialists, while today their numbers have increased considerably. Since the beginning of the training year there has been an effective campaign in progress to increase the aggregate proficiency rating in the subunits and unit. Many signal personnel have already met the pledges adopted for the summer period of training and are endeavoring to achieve another milestone in the course of training -- to make the unit an outfit of high proficiency-rated specialists. As we know, development of high proficiency-rated specialists and further increasing their knowledge and skills depend to a high degree on the level of their technical proficiency. Therefore the command authorities, the party and Komsomol committees actively organize dissemination of military technical knowledge among personnel. In addition to scheduled classes, technical conferences, technical evenings, and competitions on design, construction, operation and maintenance of communications equipment are held in the unit on a regular basis, as well as lectures and talks on the preeminence of Soviet science. The following specific-theme evening events were held, for example, at the initiative of party members officers Shkel' and Afanas'yev: "Our Country Is the Homeland of the Radio"; "Future Communications Equipment"; and "Communications Discipline -- Foundation of Platoon and Company Combat Readiness." They played an important role in preparing the men for proficiency rating examinations.

[Question] Could you please tell us about the role of the party committee in the training and indoctrination process?

[Answer] A broad group of party members who are specialists 1st class are today taking part in implementing the measures specified by the party committee. Discussions on theory are regularly scheduled and held, and lectures, reports and briefings are presented on the most important items of military technical knowledge, as well as methods of improving professional skills. For example, all members of the party committee took part in preparing a theoretical discussion on the topic "Scientific and Technological Advance and Strengthening the Defense Might of the Soviet State." They monitored progress in the preparations, talked with activists on the substance of the topic, gave them advice on what items to cover in the various lectures and reports and how to tie them in with practical affairs and the tasks assigned to this outfit. As one might expect, the discussion was conducted on a high ideological and organizational level. It showed that the majority of party activists are working conscientiously to increase their ideological-theoretical and military technical knowledge and are skillfully applying it in their practical activities. Officers Kaydalov, Dem'yanenko, and many others displayed profound knowledge of the subjects covered. The party committee devotes much attention to study by party activists of practical work with personnel. Various forms of instruction are utilized toward this end, particularly instruction of activists directly in the companies. Party committee members are regularly given assignments to assist activists in planning and scheduling indoctrination work, in preparing for and holding party buro sessions and party meetings, as well as other activities in the subunits pertaining to ensuring exemplariness by Communists in training, strengthening discipline, and efficient performance of alert duty. Party member Karpenko, for example, working in the party organization in which

officer Sokolov is registered, helped the secretary do a better job of organizing his activities during the period of routine maintenance operations. He took part in assigning party members to the most important areas, presented a talk to the men entitled "Prompt and High-Quality Performance of Routine Maintenance Procedures -- Foundation of a High Degree of Combat Readiness," organized methods classes with officer personnel, and later with warrant officers and NCOs. As a result the task assigned by the command authorities was accomplished on schedule and with excellent quality. The party committee assigns an important role to increasing the tactical maturity of leader-Communists and to their knowledge of the combat tactics of the probable adversary. The headquarters party organization Communists offer the party committee reliable support in this area. Deputy chief of staff Major Kondrat'yev, for example, having thoroughly studied the communications equipment and acquiring solid skills in operating it in a difficult tactical environment, ably teaches this to the subunit commanders. He not only holds scheduled classes in technical training but also is quite willing to help communications personnel during hours of independent study. For example, this officer helped Warrant Officer Kirilov learn skillfully to employ communications gear in conditions of enemy utilization of heavy electronic countermeasures in a difficult tactical environment. At the next training conference this officer told all the subunit's specialists about advanced tactics. Warrant Officer Kirilov also spoke. He gave a valuable presentation on how to prevent equipment malfunctions between maintenance intervals, particularly at specialist tactical drills and tactical exercises. The close bond between the party committee, the party and Komsomol organizations enables it to note in a prompt and timely manner all advanced developments in operation and maintenance of communications gear and, with the commanding officer's approval, promptly to adopt methods innovations into practical personnel training. For example, in one of the subunits Warrant Officer Amelyushkin's crew demonstrated that there is considerable capability to improve the quality of work performance and to surpass performance standards during the period of equipment operation and servicing. At the initiative of the party committee, engineers and technicians, led by master proficiency-rated communications specialist party member officer Shkel', helped other crews master the efficient work techniques of Warrant Officer Amelyushkin and his men. They organized practice sessions to meet performance standards initially element by element, without considering time limits, and subsequently the full procedures, for time. The performance of each specialist was carefully timed and analyzed. Those crews and individuals who achieved the best results were commended. All this enabled the subunit to surpass the tough combat training performance standard by almost one third. It is no secret that at times some excellent-rated individuals are unable to present in an understandable manner their communications gear operation and maintenance techniques or to demonstrate on the equipment how it can be operated and serviced more efficiently. In such cases it is very important to give timely assistance to the vanguard performer and to make him an active propagandist of technical knowledge. The party committee always considers this factor. Committee members frequently help excellent-rated individuals and high proficiency-rating specialists prepare for a presentation on advanced operating procedures at a meeting or technical conference, in the wall newspaper or over the base radio. Frequently the leaders and commanders of the best crews and platoons speak to the men of other subunits, demonstrating

on the equipment advanced methods of operating and servicing it. Figures on the performance achievements of signal personnel, in the form of unique diagrams, graphically show the growth in proficiency of specialist personnel and time performance results in meeting targets and performance standards. Platoon and company commanders conduct with warrant officers and noncommissioned officers detailed critiques of specialist tactical drills, tactical exercises, and training drills, showing the best performances and analyzing mistakes. These analyses are continued in the evening hours as well, when all signal personnel congregate in the Lenin rooms. The party committee works constantly to develop initiative in the activists and teaches them the ability to find the main thing and to concentrate the attention of radio operators and other specialists on resolving the main problems of combat training. Once party committee member Communist V. Serikov, studying the state of affairs in one of the companies, established that the men of that company had made obviously understated pledges. He gathered together the subunit's Komsomol activists, discussed the matter in detail with the men, pointed out unutilized reserve potential, and advised them on how to enhance the role of excellent-rated individuals in organizing the campaign for stable high results in the training and indoctrination process. Subsequently meetings of personnel were held in the platoons, and later in the company, at which higher, but entirely realistic pledges were adopted.

[Question] Could you tell us, comrade lieutenant colonel, about the role of seminar classes and talks in indoctrinating men?

[Answer] An important role in teaching the activists is assigned to these tested and proven forms. We hold monthly seminars, with various categories of party activists. This enables us to discuss more thoroughly and purposefully current matters pertaining to party organization affairs and activities. Prior to drawing up seminar class schedules, leader personnel confer with the activists on what agenda items should be raised for discussion. When preparing for seminars, the party committee members without fail study the state of affairs in the subunits and help activists do a better job of preparing for presentations on the recommended topics and issues. Officers from unit headquarters take active part in organizing and holding the seminars. These people possess substantial resources in the area of theory as well as practical know-how and a good deal of specialized training. Officer Starodubtsev gave an interesting presentation at one such seminar. He spoke about joint efforts to mobilize personnel to meet socialist pledges, to achieve an all-out increase in job proficiency and to instill excellent moral-fighting qualities. All the men of this subunit became actively involved in the campaign to earn military valor badges. This was proceeded by a good deal of activist organizational work. Interviews were held with each individual, after which personnel meetings were prepared for and held. Platoon commanders and section leaders regularly totaled up results of competition among personnel. In each subunit party members helped the young people set up "Measure Your Performance Against the Leaders!" display stands. They depicted the accomplishments of the communications personnel who had already won three or four military valor badges. Everything impeding progress is analyzed and subjected to acute, firm criticism at seminars. Party members are constantly concerned with the effectiveness of socialist competition.

[Question] Valeriy Timofeyevich, could you tell us about the work being done by party committee members and other Communists in the area of dissemination and adoption in the subunits of the advanced know-how of the competition right-flankers?

[Answer] Party committee members and other activists attach great importance to holding get-togethers between newcomers, excellent-rated personnel in combat and political training, and highly proficiency-rated specialists -- radio operators, telegraph operators, telephone operators, and radio repairmen. The young people become acquainted with the traditions of the signal troops, they are told of the illustrious doings of the harmonious military family and about socialist competition right-flankers. All this evokes in young people a desire to work to the full extent of their ability, in order rapidly to master radio communications equipment and to become skilled specialists. The party committee continuously seeks to ensure that the achievements of the top personnel serve most beneficially in the campaign to achieve further increase in vigilance and combat readiness. Party committee members officers Borisov, Butov, and others, for example, have studied the vanguard work techniques of other communications personnel, have synthesized their amassed advanced know-how and now are using all means aggressively to publicize the secrets of expertise of the socialist competition right-flankers under the slogan "Be alert, in a continuous state of readiness to defend the achievements of socialism!" Activists are concerned to ensure that the materials of the display stands entitled "Who Is Leading Today," "Forum of Advanced Know-How," and "Socialist Competition Screen," as well as comments in the wall newspapers and subunit news sheets discuss persuasively and in detail how the competition winners are progressing toward the heights of expertise and are further building upon their accomplishments. In addition, excellent-rated individuals and high proficiency-rating specialists, at the initiative of party members, regularly share their knowledge and experience with their comrades not only in the classroom but also during performance of routine maintenance procedures, during training drills in the signals training areas, as well as on field exercises. High-quality training facilities are an important factor in successfully meeting adopted socialist pledges and in adoption of advanced signal personnel training methods by the members of the party committee. Recently party members have improved working models and have designed and built new and unique devices. The efforts of the party activists are highly regarded by the young people. Measuring their performance against the Communists, the men are filled with resolve to improve their achievements in military labor. They are working persistently to increase the vigilance and combat readiness of an excellent-rated military outfit.

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PROBLEM OF PILOTS BEING GROUNDED BY HEART DISEASE DISCUSSED

Moscow AVIATSIYA I KOSMONAVTIKA in Russian No 9, Sep 84 (signed to press 3 Aug 84) pp 18-19

[Article by Candidate of Medical Sciences Col Med Serv V. Vlasov and Candidate of Medical Sciences Lt Col Med Serv V. Libkind: "'The 'Affliction of the Times' and Flying"]

[Text] Fighter pilot Anatoliy Shapovalov was a genuine expert at his job, possessing a consummate mastery of the art of aerial combat. Unfortunately, however, he had a negligent attitude toward his health. He literally smoked constantly between flights. He treated the doctors' advice and warnings as a joke. In addition, he had recently given up physical exercise and spent his leisure time in an armchair watching TV. He soon became overweight, and his blood pressure rose. At his next medical examination he was declared medically unfit to fly. The diagnosis was ischemia cordis or ischemic heart disease (IHD). Thus a pilot who was at the peak of his productive energies and abilities was forced to give up that activity which he loved most.

This ailment is called the "affliction of the times." Medical experts believe that ischemic heart disease is the most frequent form of cardiovascular disease, a group which in recent years has become the leading cause of death and disability among the general public. The materials of a clinical survey indicate that in many countries more than 20 percent of the population suffer from cardiovascular ailments. Disabilities resulting from this exceed by a factor of 2.5-3.5 total or partial disability from other causes. In the GDR, for example, each year heart ailments cause 43 percent of all cases of disability among males.

Ischemic heart disease is widespread predominantly among males. It is especially typical of economically developed countries with steadily growing urbanization and a fast-paced life. This disease was encountered so rarely at the beginning of the present century that it was considered almost a medical curiosity. In recent years, according to the figures of the World Health Organization, male mortality from IHD between the ages of 25 and 44 increased by 60 percent, and by 15 percent among males under 31 years of age.

Diseases of the cardiovascular system also affect flight personnel. A synthesizing examination of the statistics obtained from a cardiological study

conducted at a facility of the U.S. Institute of Aerospace Medicine established that in the period 1956-1970 cardiovascular pathology led all other causes for flight personnel being sent for medical examination. A number of Soviet and foreign authors note that in 20-30 percent of cases affections of the blood circulatory organs lead to medical grounding of pilots.

What is the nature and what are the causes of ischemic heart disease? Atherosclerosis of the coronary arteries (vessels of the heart) causes this disease. The term "atherosclerosis" is formed of two Greek words: "athere" -- gruel, and "sklerosis" -- hardness. Atherosclerosis is the hardening of a vessel due to the accumulation in the vessel wall of a gruel-like mass, containing principally fats and fatty materials designated by the general term "lipids." A particular role among these materials is played by cholesterol. In contrast to other lipids, it does not break up in the vascular wall. Accumulating, it produces a marked reaction by the surrounding tissues, which promotes the forming of atherosclerotic plaques. Entering the vessel's lumen, the plaques constrict it and impede blood flow, which leads to a decrease in blood supply to the organs and tissues -- ischemia. When a vessel becomes entirely blocked, tissue necrosis (infarction) develops in this area. Infarction of the myocardium (heart muscle) can develop even without obstruction of the coronary arteries, when a marked discrepancy is observed between the heart muscle's oxygen requirements and its actual supply by arterial blood. This is connected with the fact that coronary arteries affected by atherosclerosis, due to loss of elasticity, are unable to dilate or constrict in relation to the requirements of the working heart.

Observations indicate that the first symptoms of ischemic heart disease develop with constriction of the coronary arteries by 50 percent or more. A person feels pain or pressure, a heaviness in the central part of the chest, behind the sternum, sometimes deep in the throat. The pain may be strong and be accompanied by fright, a feeling of weakness, and a cold sweat. Usually such attacks, known under the designation "angina pectoris," occur in the morning, especially during cold, windy weather, following a heavy meal, during physical exertion, or soon after emotional stress. As a rule validol or nitroglycerin relieve angina symptoms. If nitroglycerin has no effect, myocardial infarction may ensue. In any case one should immediately call a doctor.

At the present time it is not possible to name any one cause of development of atherosclerosis and IHD. There are many. But as a rule they operate in various combinations. Generally two principal groups of risk factors are specified. The first group encompasses sociocultural factors: insufficient physical activity (hypodynamia), smoking, a high-calorie diet rich in animal fats, and psychoemotional stress. The second group includes "internal" factors: increase in cholesterol in the blood (hypercholesteremia), elevated arterial pressure (arterial hypertension), an overweight condition, etc.

Observations by Soviet and foreign scientists indicate that IHD occurs much more frequently in persons with impaired cholesterol metabolism. Hypercholesteremia is determined in more than half of all pilots with IHD and maintaining a heavy flying workload. Atherosclerosis develops more frequently

in persons who are overweight, since this is a very serious risk factor, which promotes the development of others.

Studies conducted in seven countries showed a relationship between frequency of cases of IHD and a high-calorie diet rich in animal fats. In the United States, for example, where there is a high frequency of atherosclerosis, animal fats make up more than 40 percent of the caloric content of the diet, while in Japan, where atherosclerosis occurs comparatively rarely, this figure is only 8 percent.

A flight personnel diet the caloric content of which is more than 30 percent represented by animal fats exceeds the level of energy expenditures of flight personnel. This is due to the fact that pilots have greater protein and vitamin requirements, consumption of which is increased on days of flight operations. At the same time experimental observations of professional pilots who were fed a low-calorie diet with an increased quantity of vegetable fats indicated favorable changes in their lipid metabolism.

Among patients with coronary impairments there are considerably more smokers and drinkers than nonsmokers and alcohol abstainers. For example, according to observations by American scientists covering males between the ages of 30 and 59, figures on myocardial infarction per thousand persons were as follows: never smoked -- 40; gave up smoking -- 50; smoked half a pack a day or less -- 66; a pack a day -- 83; more than a pack a day -- 131 persons.

As we know, nicotine elevates arterial blood pressure, increases heart rate, and increases the heart's oxygen requirement. In addition, carbon monoxide inspired during smoking forms an inert compound with hemoglobin (an oxygen carrier) and reduces the blood's oxygen capacity. Myocardial ischemia intensifies as a result. It is especially harmful to smoke just before flying.

Experience also indicates that myocardial infarction and other manifestations of ischemic heart disease frequently occur against the background of marked psychoemotional stress.

Can the development of IHD and atherosclerosis be prevented, or at least the danger of their occurrence be diminished? Measures to prevent these diseases should include an aggressive campaign against smoking, improving diet, increasing physical activity, and organizing a reasonable regimen of work, rest, and leisure. As we see, these are all organizational measures, which go beyond the boundaries of the capabilities of the medical service. They should be planned and executed through the joint efforts of command authorities, political agencies, medical personnel, and specialists in physical culture and sports. N. A. Semashko, a prominent Soviet figure in the field of health, state that "prevention must be interpreted not narrowly, as the parochial task of health agencies, but broadly and deeply, as concern by the Soviet State for strengthening the health of the Soviet people."

In the campaign against cardiovascular diseases in flight personnel, it is very important to have smokers conscientiously and deliberately give up this harmful habit. The widely-practiced smoking breaks between classes and

conference sessions render an ill service. It has been established that after 90 minutes in a smoke-filled room the nicotine level in the organism of a nonsmoker increases more than sevenfold. Naturally if a pilot has been given the recommendation to stop smoking by the flight surgeon medical board, it should be unswervingly accepted. As a rule medical examinations of these individuals between flight operations reveal more pronounced changes in the blood circulatory system and a longer time to normalization. There are remedies (lyubesil, tabex, anabesine hydrochloride) which are capable of easing the process of withdrawal from smoking. They are taken for a period of 7-10 days according to a special regimen, under a doctor's supervision. It is advisable temporarily not to fly during this treatment.

The atherogenic influence of the diet factor can be reduced with a reasonable meal regimen, regular monitoring of pilots' weight, reducing the caloric content of the diet on nonflying days, and by a proper selection of items in the diet. The sensibleness of a healthy person eating 4 times a day has long since been scientifically validated. The periodicity of taking food affects lipid metabolism. It has been established, for example, that a high-calorie diet consumed in one or two meals leads to intensification of the process of lipogenesis. Adverse effects are also produced by a regimen in which flight personnel ingest their entire daily diet over a period of 7-8 hours, even if they take it in four meals. Studies have shown that food overloads increase the synthesis of lipids, including cholesterol.

Physical activity is a universal means of combating the development of atherosclerosis and IHD. Fats burn up faster in physically fit individuals, physiological changes caused by emotional stress normalize more rapidly, and the heart muscle is better supplied with blood.

Good ways to combat hypodynamia include cross-country skiing, bicycling, and swimming. These sports are characterized by substantial energy expenditures.

Sending pilots to preventive clinics for rest is particularly effective. These facilities should utilize in full measure the entire arsenal of means to improve physical fitness. During such a stay, intensive physical exercise can be combined with somewhat reducing the caloric content of the diet by cutting the percentage share of animal fats and easily-assimilated carbohydrates. A properly organized regimen of work and rest creates a positive emotional background and can mitigate the effect of atherosclerosis and IHD risk factors.

A preventive medical approach to atherosclerosis among flight personnel is grounded on the use of the polyvitamin preparation Aerovit. It should be taken at a dosage of 1 tablet a day for 30 days. This course of vitamin therapy can be repeated in 5-6 months. This preparation reduces blood cholesterol content and improves lipid metabolism for a period of 2-5 months.

Combined employment of various measures to prevent atherosclerosis and IHD does a fairly good job of protecting flight personnel from the development of coronary impairments and in the final analysis promotes flight safety.

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THRIFTY, ECONOMICAL AIRCRAFT SERVICING AND MAINTENANCE URGED

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[Article, published under the heading "We Invite Discussion," by Lt Col I. Lymarev: "If Sensibly, That Is, With Good Management"]

[Text] As we know, the campaign for economy, a conscientious attitude toward military property, and efficient utilization of material resources are important current tasks. Proceeding from this, the Communist Party demands that they be carried out persistently and consistently, stressing conscientiousness and initiative on the part of officer-Communists, as well as a high degree of responsibility by these personnel for the assigned work sector, with the aim of strengthening combat readiness.

In our unit's aviation subunits the movement for thrift and economy has taken on a mass character, and therefore it has produced fairly tangible results. They are particularly noticeable in savings and economy of fuel and lubricants. Experience eloquently attests to the fact that an important role in instilling in aviation personnel a strong sense of responsibility for economizing in fuel, oil, and other materials is played by aviation engineer service leader-Communists, their persistence and purposefulness in organizing work on aircraft. Recently, thanks to the efforts of commanders, political workers, and party organizations, we have succeeded in substantially reducing the consumption of fuels and lubricants in the operation and servicing of aircraft and flight operations support equipment.

We are far from self-delusion, however. For this reason we should like to discuss today those as yet unutilized capabilities which have a negative effect on efforts to economize in the detachments and squadrons. First and foremost they include insufficient effectiveness of political indoctrination work conducted with personnel by some subunit aviation engineer service supervisors.

Let us say that ground crew aircraft preflighting is in progress in the unit. [Accompanying photograph shows An-22 standing on ramp]. Each aviation engineer service specialist is not only familiar with but also performs his duties as specified by the corresponding guideline documents. What new elements could be added to the precise, measured work rhythm? And are any

indoctrinational measures at all needed at this time? I believe there are, for indoctrination of aviation personnel and development of excellent moral-political qualities in this personnel is a continuous process. And it should not cease for a single minute. But the forms of indoctrinational influence can be highly diversified, and their effectiveness depends on this. Sometimes even a brief conversation next to an aircraft or simply a tip or cue can produce a positive effect.

Let us return to the preflighting procedures. A young officer is completing a fuel sample check on one of the aircraft. I walk up to him and ask how large a fuel sample he had taken.

"A bucketful," he replies.

"Is that enough for a check?"

The lieutenant replies and, I might add, replies correctly that the manual calls for taking a larger sample, but he feels bad about throwing away virtually clean fuel. What does he mean by throwing away? I pricked up my ears at this comment. The officer did not seem to know what economy was and what benefit it produces.

"Drain as much fuel as the manual calls for," I told him and explained that it would not be wasted, since it could be used in the heat engines when preparing the airfield for the next flight operations shift.

The lieutenant raised his eyebrows in surprise. He apparently did not know about this, and nobody had talked to him about it. The technician and I continued the inspection of the aircraft and ramp area. I looked around for the container into which the fuel sample drained from the sump was supposed to be poured, but it was nowhere to be seen. We found the same situation at the adjacent ramp position. Squadron deputy commander for aviation engineer service officer A. Panasenka explained that in the subunit there was only one receptacle per detachment, and he pointed to a tank truck parked at some distance from the flight line.

Making our way with difficulty over to the truck, we determined that sump-drained fuel samples were rarely poured into the truck's tank, and fuel in the tank was pumped off only sporadically. And the entire reason for this was that there was no easy access to the truck location. The unit deputy commander for aviation engineer service, officer V. Borisov, joined the discussion. He tried to blame the servicing unit.

"There are no available containers at the fuel and lubricants terminal," he stated.

A check established, however, that containers had been obtained several years previously, but during this period half of them had become unusable and discarded.

Perhaps this incident is too trivial to discuss, but fact remains fact: some of our aviation engineer service officer-supervisors, Communists and Komsomol

members are lax in their attitude toward conserving costly aviation fuel. The incident also indicates poor effectiveness of political indoctrination work with personnel in matters of thrift and economy. Even simple calculations indicate that if as many as 40 liters of fuel is drained from the tank sumps in the process of a single preflighting, groundcrew personnel could save several hundred rubles worth of fuel per aircraft per year. And how many other operations connected with draining fuel are performed in the course of the training year! We should give some thought to this: it is high time to put an end to squandering and waste.

Here is another example, attesting to the fact that some leader-Communists are lacking a proper sense of responsibility and adequate flexibility in directing aircraft servicing procedures, as a result of which aviation engineer service specialists are forced to depart from established technical rules and procedures and the requirements of process discipline. An aircraft is handed over to the technical maintenance unit for performance of routine maintenance procedures. As a rule this is done on a very specific timetable. A number of preliminary operations must be performed on the aircraft, including draining the fuel tanks. Fuel trucks are needed, but they are not there at the designated time. Why? It seems that all of them have been fueled up and readied for servicing aircraft in flight operations. What is the solution? Naturally in this case everything depends on the promptness and efficiency, I might say flexibility on the part of the senior flight operations engineer.

Indeed, why not take one of the fuel trucks off flight operations support and place it at the disposal of the maintenance crew which is readying the aircraft in the technical maintenance unit? Nothing of the sort! As the deputy commander for aviation engineer service later explained, they were short of fuel trucks as it was, and some of the ones they did have were out of service. In short, the senior flight operations engineer was right, but thought must also be given to the prompt and timely return to service of those trucks not involved in flight operations fueling.

Sometimes, however, there are factors involved which have nothing to do with the businesslike efficiency of the aviation engineer service specialists. One of the aircraft returned to the field late one night. Groundcrew chief officer V. Syrovatka was waiting for it on the ramp and proceeded to ready it for fueling. He checked the fuel card, consumption record, and other documents. All were in order. Senior Lieutenant Syrovatka then instructed the fuel truck driver to drain a fuel sample to check it. It was found to contain ice crystals.

The officer displayed firmness and refused to fuel the aircraft. He reported the incident to the airfield technical support duty officer. The latter conferred with the chief of the fuel and lubricants service and reported that the fuel was up to standard, that the ice crystals had come from the filler neck, where air is always present and moisture condenses, forming crystals. They slosh off into the fuel when the truck is in motion. But these arguments failed to convince the technician, and he demanded another fuel truck, which unfortunately did not arrive practically until morning.

What is the root of the problem? The documents currently in force specify that fueling an aircraft with substandard fuel is an action classified as potentially accident-causing. An investigation of the incident determined, however, that there were no guilty parties, that everybody was in the right. Nevertheless, when the laboratory technician was asked to describe how he had added anti-icing fluid at the pumping station, the latter replied that the station was down for preventive maintenance and that the fuel had to be pumped into the truck minus the fluid. The fluid had been added by bucket.... The picture was becoming clear: certain persons in authority had been too busy to teach the lab technician, others were too busy to ensure that the transfer pumping station was operating properly, while still others were too busy to check fuel newly pumped into the tank truck precisely when the check should have been made. And it was only the aircraft groundcrew chief who considered that such a serious matter as concern with ensuring flight safety was the most important thing.

I should like to touch upon the matter pertaining to economy not only of fuel but also engine operations, tires, etc. Once a team of aviation engineer service officers from higher headquarters sought to determine the quality of flight operations support in the unit in which officer A. Simonov serves. Organization of preflighting procedures, number and condition of aircraft involved in flight operations, and availability of support facilities at first evoked no adverse comment. But when flight operations commenced, the phones began ringing at the aviation engineer service command post -- groundcrews were requesting fuel trucks to top off one aircraft after another. The inspecting officers determined during that day's flight operations that such instances of aircraft fuelings had become a customary occurrence at this field.

The following picture emerged. With the permission of the aircraft commander, the aircraft crew chief would load into the tanks more fuel than was required. This meant that less fueling would be required when readying the aircraft for the next training sortie. Consequently this meant a shorter aircraft turnaround time.

This would seem praiseworthy at first glance. But there is another side to the coin, as they say: the aircraft is designed to carry heavy payloads and a substantial fuel load. But what is the need for this during scheduled training flights? Carrying excessive fuel during disadvantageous engine operating modes leads to increased fuel consumption. And in addition, the heavier an aircraft is, the more the engines operate under full power during takeoff. And these engine operation conditions produce the greatest thermal stress. Also, a heavily-loaded aircraft requires heavy braking on the landing rollout, which leads to premature wear of brake pads and tires.

In this article we have touched upon only the economic aspect of the matter. But even this is quite sufficient to ensure that leader-Communists who are the direct organizers of work on aircraft become permeated with a feeling of responsibility for instilling thrift and economy in their subordinates and develop in them a good-management attitude toward military property.

The stated shortcomings can be corrected only if every aviation engineer service officer without exception will purposefully and persistently implement Communist Party decisions and demands of the USSR minister of defense pertaining to economizing on resources and funds allocated for organization of flight training.

Speaking about this serious problem at a get-together with workers at Moscow's Hammer and Sickle Metallurgical Plant, CPSU Central Committee General Secretary Comrade K. U. Chernenko, chairman of the USSR Supreme Soviet, stressed: "Plenty of correct words have been spoken about the need to achieve savings in metal, fuel, energy, and all other resources, but in many cases they are not backed up by concrete deeds."

Proceeding from this, we should like everybody who is directly connected with matters pertaining to thrift and economy of costly resources and funds, who are truly concerned about their economical, thrifty utilization to state their opinions on the problems touched upon in this article.

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SIMULATED COMBAT-ZONE AIRCRAFT FIELD REPAIR, BATTLE-DAMAGE PATCHING TAUGHT

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[Article, published under the heading "Know-How of the Best Into the Combat Arsenal," by squadron deputy commander for aviation engineer service Gds Capt A. Ivanov: "We Master Field Repair"]

[Text] The flight operations shift was in full swing when the wind suddenly picked up. The weather was deteriorating rapidly. Analyzing the weather situation, the commanding officer decided to cease flight operations.

Aircraft engineer service personnel towed aircraft to their ramp positions and buttoned them up. We decided to spend the remainder of the duty shift holding a practice drill on aircraft field repair. Contacting Gds Capt A. Sofronov, regimental technical maintenance unit sheetmetal-machining group chief, by telephone, we asked him to act as an instructor, to give a detailed briefing on methods of repairing fuselage and wing skin "holed in air combat," by the patch method. Officers V. Motchannyy, V. Negodyayev, and other detachment and servicing group technical maintenance unit chiefs hold similar classes in an equally interesting and instructive manner.

The men assembled in a classroom set up as a shop, containing visual aids on aircraft repair procedures. In these training classes maintenance personnel master riveting procedures, learn various methods of troubleshooting, and acquire skills in repairing aircraft. Many are now capable of independently performing the mathematical calculations for a number of repair operations. The men are also quite willing to learn more complicated repair operations and endeavor to solve with high quality the problems presented by the instructors. And the point here is by no means the fact that subunit aviation engineer service supervisors assign grades at the end of each training class. It is simply that all aviation personnel are aware of the importance and necessity of acquiring repair skills.

We try to hold such classes at least once a month. They help the men improve their job skills and technical proficiency.

Up until quite recently, however, things were different. And although our maintenance personnel were for the most part highly skilled and had

successfully mastered maintenance of modern bombers, [accompanying photograph shows Tu-16 "Badger" bombers flying in formation] in the past not every man was able to correct problems in a sufficiently knowledgeable manner. If, for example, a small crack was spotted on an inspection cover or a rivet fatigue failure, the maintenance technician would be forced to turn for help to technical maintenance unit specialists. At the time we considered that everything connected with repair was not our job but that of the sheetmetal and machining group specialists.

We had to revise our work methods and reassess our capabilities. The fact is that every technical maintenance unit officer at one time completed a full course of study at service school, where he mastered the fundamentals of riveting, buffing and painting operations, learned to seal joints and determine the condition of assemblies, systems, and individual aircraft components by various flaw detection methods. And of course there was a reason for teaching us this. Naturally one has occasion to perform such operations on aircraft fairly infrequently, and acquired skills naturally are gradually lost. But while in the past we accepted such a state of affairs, now demands on engineer and technician personnel have substantially increased. That which yesterday was considered quite an achievement is today becoming normal procedure. The slogan "Teaching aviation engineer service specialists field repairs means teaching that which is essential in war" has in present-day conditions taken on a more practical meaning than even before.

After making the decision to conduct training classes in field repair and proceeding to organize them, we encountered certain difficulties. For example, we were not immediately successful in mobilizing personnel psychologically and in creating a good, businesslike attitude in the men. And there were virtually no suitable working conditions: neither facilities, nor specialized tools and equipment, nor technical documentation. We began with facilities. The squadron aviation engineer service Communists and Komsomol members suggested making one of the classrooms available for a shop, by somewhat crowding some of the servicing groups. As for documentation, part was borrowed in the technical maintenance unit and the regimental aircraft repair shop, some was obtained in the library, while several pamphlets and descriptions were sent at our request by the department of repair and overhaul at the Kiev Higher Military Aviation Engineering School.

Our innovators took active part in establishing our repair facilities. Capt V. Smirnov, Sr Lt O. Smirnov, WOs M. Pogorelyy, A. Ustinov, and other volunteers, for example, built display stands, drew posters, and prepared excerpts from documents. All these teaching aids were displayed in the classroom, and now the men can obtain a clear picture, for example, on what kinds of damage are encountered most frequently, how to calculate area and choose material for patching, what rivet shapes and diameters are best to use in a given part of an aircraft, and how to repair ruptured hoses, lines, stringers and longerons. At our request, the people in the technical maintenance unit fabricated sets of duralumin semifinished pieces of specialized material, which we use in teaching maintenance personnel rudimentary riveting skills.

More and more volunteers helped us set up the classroom. We wired the classroom for different voltages, so that we could not only illuminate the work stations but also hook up an electric drill, a polishing and buffing wheel, and a soldering iron. They built workbenches along the walls, which also serve as cable and tool storage racks. We obtained vises, compressed-air hammers and drills. We were assisted in this by the unit's engineers and regimental aircraft repair shop specialists. Intelligent initiative was displayed by WO M. Pogorelyy. He rigged up a scrapped fire-extinguisher cart to carry compressed-air cylinders and mounted hoses, regulator valves and pressure gauges in a compact arrangement. This resulted in a unique unit which provides the capability for several specialists to perform riveting and drilling operations simultaneously.

Soon we realized that it was necessary to increase the number of work stations in the classroom and to diversify the training activities. Nor is it very pleasant to be in a room where one hears a racket on all sides, the droning of motors, and smells the pervasive odor of rosin. After considering the matter, we decided to set up a work area not far from the flight line, in order not to waste time walking to and from and preparing for classes. We set up the work area. We fashioned stands out of discarded tires and placed an aircraft wing on them. We turned to technical documentation from the Great Patriotic War and photographs taken in those years. This enabled us to gain a clear understanding of interior and exterior battle-damage holes caused by shell fragments and bullets. Our boys made holes in the wing to simulate battle damage. Now the instructor, on the basis of a certain tactical environment, assigns personnel the task of repairing battle damage and specifies a timetable and the number of men to work on the damage. All this maximally approximates conditions of training to actual combat.

Training classes are organized in such a manner that while one group works, others observe how their comrades have prepared their work stations, how they utilize the expendable materials, tools, test and other equipment, and to determine if they make mistakes. In the course of performance of the scheduled operation, the instructor tells one of the specialists to replace a "disabled" comrade and to complete the work he has done.

These classes definitely arouse interest in the men and are very beneficial. The aviation personnel skillfully apply in their work the skills they have acquired. Recently, for example, Capt A. Zaikin and WO M. Pogorelyy designed portable devices for changing tires without removing the wheels. This has shortened the time required to make bombers combat-ready.

We could cite many such examples. Nevertheless as we see it the main thing is the fact that the men are learning to work in a combat environment and perform laborious repair operations. The results of this important work are reflected in visual agitation materials and are taken into consideration when totaling

up maintenance crew competition performance results. The majority of aviation engineer service specialists specify in their pledges the mastery of more complex operations on the aircraft. This promotes further growth in their technical expertise and mastery of related occupational specialties.

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IMPORTANCE OF PROMPT RADIO COMMUNICATION FOR AIR SAFETY, MISSION PERFORMANCE

Moscow AVIATSIYA I KOSMONAVTIKA in Russian No 9, Sep 84 (signed to press 3 Aug 84) p 31

[Article, published under the heading "Constant Attention to Flight Safety," by Lt Col (Res) D. Rozhkov: "The Price of a Second"]

[Text] It is difficult for us today to conceive of our lives without radio. Radio communications perform an exceptionally important function in aviation, especially in flight operations and tactical control.

I recall the time when our combat pilots were learning to fly first-generation jet aircraft. Every pilot who flew one of these unusual propless aircraft felt to a certain degree like a test pilot. Many various problems arose and were resolved in the course of flight operations. And as a rule it was the most experienced, comprehensively trained aviators who were among the first to master the new equipment.

Once a pilot was flying a training sortie over the field in a jet fighter, executing advanced maneuvers with consummate precision. Dozens of eyes were following the aircraft from the ground.

The winged machine was compliantly yielding to man's will. The aircraft streaked skyward with the speed of lightning. Everything was proceeding normally. He would soon be landing. Suddenly the roar of the turbine broke off, and the field was suddenly shrouded in silence. Immediately a voice came over the radio: "What happened?" An agonizing pause ensued. Finally the pilot responded: "This is 506, I have had a flameout. I am following the prescribed procedures."

The flight operations officer naturally was nervous: the pilot had to be helped make the right decision....

How long such instants drag out. He was unable to restart the turbine, the heart of the aircraft. Tension was rising on the field and in the tower. The heavy silence was broken only by the crackling over the speaker. Once again the pilot's voice came on: "Engine won't start, altitude... airspeed...."

On the ground everything has been weighed and thought out in detail. But time is of the essence! The situation was such that there was not a second to be lost. An instant decision is made, and the command is radioed: "506, eject immediately!"

A command has the force of law for a pilot. It is not subject to discussion. The ejection mechanism operated flawlessly. A white parachute canopy flashed against the blue sky background. A few minutes later the pilot was safely on the ground. He had done everything possible to save his aircraft, but none of his attempts were successful. Subsequently the cause of the mishap was ascertained. Twice Hero of the Soviet Union Maj Gen Avn I. Stepanenko, analyzing the air situation which had developed, also had high praise for the radio communications, which functioned flawlessly and with precision. All reports from the pilot, commands from the ground, as well as the order to eject were received promptly, which enabled the pilot, for whom the precious seconds were running out, to eject in time.

People in aviation know the price of a second. Accomplishment of a combat mission very often depends literally on seconds saved not only by the combat pilot but also by every specialist involved in air traffic and tactical control, on the degree of proficiency, coordination and smoothness of interaction by crew and duty shift team. All members of the air traffic control team, especially in the tactical control component, must bear in mind at all times that their performance determines the functioning of the entire system. Even the slightest violation of procedures, inaccuracy, not to mention confusion leads to serious consequences.

In this connection particular demands are imposed on radio communications support and on providing combat pilots with prompt and accurate information. Therefore commanders of aviation units and subunits devote considerable attention to training flight personnel, tower controllers, command post teams, and specialist personnel supporting flight operations in the conduct of radio communications, for any deficiencies in this area affect combat activities.

Once a command post team was given a mock combat assignment: to vector an interceptor to a high-speed target. They were not told the quadrant in which it would appear or at what altitude. The command post team members took their stations. The only returns on the screen were local ground clutter. An operator must be extremely alert and be thoroughly familiar with the screen environment in order not to confuse the first target blip with local ground clutter. Finally a blip appeared! They proceeded to track the target. The interceptor was ordered to scramble. The interceptor pilot was standing by waiting for the order. After taking off he turned the fighter to an intercept heading and proceeded to search for the target. But the experienced pilot was unable to detect a target return on his onboard radar. Where was it?

Time was passing. Every second counted. The pilot asked the ground for assistance, and the tactical control officer responded with additional commands. The mission was close to failure. But thanks to his great experience and expertise, the pilot spotted and destroyed the "aggressor."

What had been the problem? At the debriefing they analyzed in detail the performance of each specialist: a low-proficiency operator had been working the radar. He had failed to spot the target return when it first appeared against the background of local clutter and therefore was delayed in reporting radar contact to the command post. But the target was proceeding at very high speed. The order to scramble was delayed. Naturally during this time the "aggressor" had proceeded quite some distance from the computed intercept point. Therefore the interceptor failed to spot it at the calculated point.

This example once again confirms what high demands are imposed on the ground specialist and how precise and swift should be the actions of each member of a team or duty shift in order not to lose precious seconds.

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50TH ANNIVERSARY OF AVIATION WORKERS TRADE UNION NOTED

Moscow AVIATSIYA I KOSMONAVTIKA in Russian No 9, Sep 84 (signed to press 3 Aug 84) pp 32-33

[Article, published under the heading "50th Anniversary of Aviation Workers Union," by V. Kalosha, secretary, Central Committee of the Trade Union of Aviation Workers: "On Shock-Work Duty Shift"]

[Text] This September the Trade Union of Aviation Workers celebrates its 50th anniversary. It was established in 1934. The 1930's were a time of outstanding achievements by Soviet aviation. Our pilots demonstrated to the entire world the great capabilities of Soviet aircraft, designed and built by the creativity and skill of engineers, technicians, workers and employees of the aircraft industry. The entire history of the Trade Union of Aviation Workers is closely linked with the growth of the might of the Soviet State and development of the Air Forces and civil aviation.

The place of trade unions in the socialist society was defined with exhaustive completeness by the 26th CPSU Congress, at which it was emphasized that the party views trade unions as its reliable support within the masses and a powerful means of development of democracy and involvement of the toilers in building communism. In order to carry out their assigned tasks, the trade unions are invested with extensive authorities and obligations, formally stated by the USSR Constitution, the Fundamentals of Legislation of the USSR and the union republics on labor, and by the USSR Law on Workforces and Enhancement of Their Role in Managing Enterprises, Establishments, and Organizations.

Under the guidance of political agencies and party organizations, the trade union organizations of Air Forces enterprises and establishments, together with the command authorities, are making a worthy contribution toward increasing the combat readiness of aviation units and toward training highly-skilled cadres for the Air Forces.

Today, in conditions of an international situation which has become aggravated through the fault of reactionary imperialist circles, the tasks being performed by workforces have become larger and more complex. This also applies in considerable measure to the workforces of aircraft repair and

overhaul enterprises. For the most part they are successfully resolving problems connected with further improving repair and overhaul processes, increasing production capacity, participation in upgrading installed equipment, and improving the quality of repair and overhaul of engines, aircraft, and flight operations ground support equipment, with a steady growth of labor productivity and thrifty utilization of material resources.

The repair and overhaul enterprises headed by officers I. Rybin and V. Vasil'chenko, where comrades Ye. Sobol' and A. Aksenov serve as trade union committee chairmen, are regularly achieving fine results in meeting production targets and adopted socialist pledges. On the basis of performance results for 1983, these workforces have been awarded challenge Red Banners of the CPSU Central Committee, USSR Council of Ministers, All-Union Central Trade Union Council, and All-Union Komsomol Central Committee. The enterprise headed by Col I. Rybin has been placed on the All-Union Board of Honor at the Exhibit of Achievements of the USSR National Economy. The workforce led by Col V. Vasil'chenko was the initiator of socialist competition under the slogan "Work more efficiently and with better quality, strengthen the defense might of the homeland with shock-work labor!" The aircraft repair and overhaul workers pledged to boost labor productivity by 1.5 percent beyond the plan-targeted figure and to reduce production cost by an additional 0.6 percent. All the workforces of Air Forces repair and overhaul enterprises voiced their support.

Everywhere work is in full swing to implement the decrees of the February and April (1984) Party Central Committee plenums, the decisions of the First Session of the USSR Supreme Soviet, 11th Convocation, and the instructions of CPSU Central Committee General Secretary Comrade K. U. Chernenko, chairman of the Presidium of the USSR Supreme Soviet, articulated at a get-together with workers at Moscow's Hammer and Sickle Plant. The thoughts expressed by the plant workers are in keeping with the attitudes and aspirations of the workers in our branch, who perceived the speech by Comrade K. U. Chernenko as a new indication of the concern by the party Central Committee and Soviet Government for improving the workingman's working and living conditions. Air Forces workers and employees are responding with shock-work labor to the appeal by party and government to increase one's sense of responsibility for the results of one's labor, for training and indoctrination of a worthy new generation of workers. The plan targets for the first half of 1984 and adopted upgraded socialist pledges pertaining to labor productivity growth and production cost decrease have been met.

The successful performance of aircraft repair and overhaul enterprise workforces is grounded on a strong Soviet patriotism and Communist conscientiousness on the part of workers and employees as well as their active participation in socialist competition and in technical innovation. The work team led by officer V. Nikonov, for example, at the suggestion of USSR State Prize recipient Communist labor brigade leader Comrade G. Lopukhin, designed and installed an improved operation-by-operation flowline method of assembly. Repair, inspection, assembly and testing operations were also improved at the initiative of the brigade members, and current time norms for jobs performed and brigade size were revised. This produced considerable savings in labor outlays, boosted labor productivity, reduced requirements in expensive equipment, and improved the smoothness of finished product flow off the line.

And at the enterprise headed by Col I. Rybin, overall labor productivity rose an additional 0.6 percent, and by as much as 1.6 percent in certain sections, in the brigades led by comrades N. Pecherin, M. Verbilo, I. Kosinskiy, and I. Pristupa, by revising time standards for jobs performed.

Civilian employees at Air Forces bases and depots are also doing their part to increase the combat readiness of Air Forces units and subunits. They are successfully meeting production targets and socialist pledges and are achieving additional successes in boosting the efficiency of depot production. These achievements are ensured in large measure by the attention which the command authorities and trade union committees devote to improving norm setting, analysis of complaints about quality of shipped goods, and improvement in the level of mechanization of heavy manual labor. The work teams led by comrades A. Zaichko, V. Kuz'menko, S. Gubochkin, and A. Mogilev are achieving the best performances in meeting targets and socialist pledges.

Implementing the demands of the June (1983) and succeeding CPSU Central Committee plenums, the CPSU Central Committee, USSR Council of Ministers and All-Union Central Trade Union Council decree entitled "On Intensifying Work to Strengthen Socialist Labor Discipline," and the USSR Council of Ministers and All-Union Central Trade Union Council decree entitled "On Additional Measures to Strengthen Labor Discipline," as well as the demands of the USSR minister of defense, the Central Committee of the Trade Union of Aviation Industry Workers and the territorial committees have stepped up attention toward organizational and indoctrination work aimed at strengthening socialist labor discipline and have increased the responsibility of their activists for its effectiveness. Considerable success in this important area has been achieved by the Kiev Territorial Committee of the Trade Union of Aviation Workers, where leader-Communists comrades A. Vakhlayev and K. Ivanov are employed. They have amassed certain positive experience in joint work by the command authorities, the Air Forces political department of the Red-Banner Kiev Military District, and the trade union territorial committee on ideological-political indoctrination of workers and employees.

Meriting approval is the practice of conducting comprehensive inspections and giving practical assistance to activists at enterprises, establishments, and organizations. Officers of the Air Forces political department and aviation engineer service of the Red-Banner Kiev Military District and officials of the Kiev Territorial Trade Union Committee take part in such activities. There was a time, for example, when the state of labor discipline left much to be desired in the trade union organization at the enterprise where Comrade V. Rudun serves as trade union committee chairman, which had an adverse effect on production smoothness and product quality. Plant management, the party, trade union and Komsomol organizations specified a group of measures aimed at improving indoctrination work with workers and employees. The workforce has carefully studied and taken as a guide the demands of the CPSU Central Committee decree entitled "On Improving Organization and the Practice of Totaling Up Socialist Competition Results and Rewarding Winners." They have begun making monthly analyses of the state of discipline at the level of the entire enterprise and fully applying administrative and community measures against each violator. An adopted system of flawless labor, which prescribes daily evaluation of the performance and discipline of each employee, has also

proven to be an effective form. As a result the number of violations has diminished sharply, and production indices have improved. And there are many such examples.

The trade union committees also devote much attention in their organizational and indoctrination work to the younger generation of workers. Attention is focused on this by the CPSU Central Committee decree entitled "On Principal Directions of the Reform of the General-Curriculum and Vocational School." The purpose of this work is to produce young people who are politically active, who love labor and have the ability to work, and who are ready and willing at all times to defend their homeland.

In his address at the April (1984) CPSU Central Committee Plenum, CPSU Central Committee General Secretary Comrade K. U. Chernenko, chairman of the Presidium of the USSR Supreme Soviet, noting that another party congress will soon be held and that we must already begin preparing for it, stressed: "For us Communists preparations for a congress are a period of analysis, totaling up achievements, a period of active reinforcement of all our positive attainments. It is also a time to draw lessons from past mistakes, of self-critical analysis of shortcomings, determination of ways to correct them and, most important, of ways to accomplish tough new tasks."

We evaluate past achievements precisely from such a position and concentrate attention on correcting deficiencies. And unfortunately, we still have deficiencies. At aircraft repair and overhaul enterprises, for example, the advantages of the brigade form of organization of labor and labor incentive are not being fully utilized, although brigades encompass more than 80 percent of workers. It is the task of trade union committees to create, together with the command authorities, conditions for more extensive adoption of economic accountability, adjusting the size of each brigade to an optimal number of persons, and securement of engineering support for the brigades.

Experience in creative cooperation by the design office team headed by Comrade N. Krupoderov and the brigade led by USSR State Prize recipient V. Romashko at the enterprise where leader-Communists comrades V. Kostyuchenko and A. Kirillov are employed can serve as an example of the linkage between science and production. It is carried out on the basis of a joint contract, according to the terms of which the design office team holds classes within the technical training system, offers skilled technical assistance to college students and students enrolled at evening and correspondence schools, and steps up efficiency innovation work in the brigade. The brigade-member workers in turn assist the design office in the performance of experimental research activities in creating or incorporating new arrangements and designs and help achieve substantial improvement of the assembly and component designs produced at this office. Adoption and manufacture of 14 separate item designations of process equipment, which increases labor productivity by a factor of 3-4 and produces savings of several thousand rubles, constituted one of the specific manifestations of the practical thrust of productive cooperation between the brigade and the design office.

Such useful cooperation does not exist everywhere, however. And yet, as the experience of vanguard workers attests, it contains considerable reserve

potential for boosting labor productivity, improving product quality and, no less important, accomplishing the tasks of Communist indoctrination of toilers.

We should also like to discuss such an important question as the collective contract and the safe and healthy working conditions agreement. On the basis of mutual obligations by management and workforces, during the years of the 11th Five-Year Plan more than 900 shop and section buildings have been renovated at Air Forces enterprises and establishments, and new general industrial process equipment has been brought into production, which has made it possible to bring the working conditions of many thousands of workers into conformity with present standards. Take, for example, the workforce led by party members comrades V. Khmelev and V. Fadeyev. Thanks to attention by management and the trade union committee, they are implementing in a planned and orderly manner an aggregate of measures to improve working conditions, job health and safety. As a result all subunits for the most part have the required production, auxiliary and warehousing space to meet plan targets while observing all requirements of industrial health and safety standards. The bulk of load lifting and transfer operations are mechanized. This workforce is one of the leaders in our industry.

But some workforces fail to devote adequate attention to this important matter. We should note that the problem of improving discipline still remains unresolved in a number of trade union organizations.

Examples of vanguard workforces indicate that on the whole all these matters are successfully resolved locally if management, party committees and trade unions work persistently and purposefully to implement the party's demands. And on the contrary, wherever disorganization, mismanagement and irresponsibility flourish, one can scarcely expect any appreciable achievements. We should not accept this state of affairs.

1984 is an important year for all aviation worker trade union organizations. It is a year of important accountability reports and elections. Trade union agencies will be presenting accountability reports, from trade union group to and including territorial trade union committee. In addition, exchange of trade union documents has already begun. These important events must be utilized toward further cohesiveness of workforces, ideological-political, moral/ethical and labor indoctrination of our workers and employees, and fuller merging of matters pertaining to unit and subunit combat readiness and their practical initiative.

Celebrating the 50th anniversary of the Trade Union of Aviation Workers, Air Forces workers and employees are filled with resolve fully to accomplish the targets of the current year and the five-year plan as a whole, to make a worthy contribution toward ensuring a high degree of Air Forces combat readiness, and to honor with shock-work labor the 27th Congress of our Communist Party.

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SPACE SHUTTLE'S MILITARY ROLE DESCRIBED

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[Article, published under the heading "The Pentagon's Orbital Arsenal," by Candidate of Technical Sciences Col E. Buynovskiy and Col M. Krymov: "The Space Shuttle: Plans and Hopes"; based on materials published in the foreign press]

[Text] The plans of the current U.S. Administration for utilizing the Space Shuttle for military purposes are contained in presidential directives and directives by the Secretary of Defense. These documents define a broad range of specific tasks assigned to the space shuttles, first and foremost pertaining to supporting the operation of the armed forces, conduct of various types of military operations in space, as well as in the area of developing future space weapons systems.

Just what is the Space Shuttle system? Its principal components include the reusable Space Shuttle manned transport spacecraft (STS; Space Transportation System), assist modules for transferring payload from a low-altitude geocentric orbit (200-500 km) into higher orbits, as well as the Spacelab orbital laboratory. In addition, the system includes ground launch-landing, repair and refurbishing facilities.

The STS was designed as a combined aerospace vehicle, containing the properties of a rocket booster, spacecraft, and airplane (see photo) [not reproduced]. It is designed in a two-stage configuration. The first stage consists of two solid-propellant boosters weighing about 580 tons each. The second stage (orbital) is an aerodynamic piloted vehicle (gross weight 114 tons including payload, length 37.2 m, wingspan 23.8 m). The externally-mounted propellant tank, weighing 750 tons, contains rocket propellant components (liquid oxygen and hydrogen) to fuel the main engines of the orbital stage.

The orbital stage is powered by three liquid-propellant rocket engines producing a thrust of 170 tons each, two liquid-propellant maneuvering engines, and several attitude thrusters. Total launch weight is approximately 2,000 tons, length 56 m. The orbital stage and the solid-propellant boosters

are reusable, while the externally-mounted propellant tank is a one-shot affair.

The shuttle's maximum design payload is 29.5 tons, with returnable payload to 14.5 tons. The orbital stage is designed for at least 100 missions, and the solid-propellant boosters for 20. A basic feature of the STS is the fact that its orbital stage can return to the earth and land like an airplane, as well as a comparatively short turnaround time to ready it for the next mission (less than a month).

The typical mission configuration includes the following phases: vertical launch and boost into initial trajectory, jettisoning of the solid-propellant boosters at an altitude of 40 km, acceleration phase, release of external propellant tank, which burns up upon reentry into dense layers of atmosphere, acceleration to orbital velocity phase and, upon completion of the orbital mission, deceleration for the return to earth. Descent in the atmosphere and maneuvering are accomplished with the aerodynamic properties of the orbital stage, employing manual control. During the approach and landing phase the pilot can maneuver laterally up to plus over minus 2,000 km and in range to 11,000 km.

In order for these craft, which have a "ceiling" of 1,100 km, to be able to take the place of one-mission boosters, the system includes so-called upper stages, which are capable of assisting payloads. The procedure of placing a satellite into stationary orbit includes the following: placement of the assist module-satellite bundle into orbit with the aid of the STS (into a circular orbit at an altitude of about 300 km), boosting the satellite into an intermediate elliptical orbit (300 km perigee, 35,768 km apogee), separation of satellite from assist module and independent transition by the satellite (with the aid of its own apogee motor) into a stationary orbit.

The U.S. Defense Department is developing for its own requirements the IUS interorbital space tug, which is capable, as is reported in the foreign press, of transferring a payload of about 2.5 tons from a low orbit into a stationary orbit.

The Spacelab orbital laboratory is designed to conduct applied military, scientific and technical research and experiments in low earth orbit.

The launch-landing and repair-refurbishing facilities handle shuttle launches, landings, and maintenance services between missions. There are two launch pads at Cape Canaveral which previously had been used to launch the Saturn boosters of the Apollo program, as well as a concrete runway about 4,500 meters in length. As is noted in the foreign press, they launch craft into low-inclination orbits, which is not entirely to the Pentagon's liking. Therefore the Defense Department is hastily constructing an additional launch and landing facility at Vandenberg Air Force Base on the West Coast, which will be able to put payloads into polar and synchronous orbits (see following table).

Why did the United States need a new spacecraft? Speaking at Edwards Air Force Base, where a ceremony was being held to greet the crew which had

Range Facility	Orbital Parameters		Payload, tons
	Inclination, degrees	Circular Altitude, km	
Cape Canaveral	28.5-56.0	185	27.5-29.5
Vandenberg AFB	56-104	185	14.5-27.5

completed the fourth mission on board the Columbia, Reagan stated that the United States would be preparing to wage war in space. "Space is one of the areas in which we should be actively involved, from where the entire world can be held in fear," he was seconded by U.S. Defense Secretary Weinberger. Viewing the STS as a long-term foundation for accomplishing the majority of their existing and future programs connected with the space arms race, the Pentagon's strategists are drawing up specific plans for utilizing this spacecraft for military purposes.

Delivery into various orbits and deployment there of military satellites designed for supporting military forces command and control and combat operations is considered one of the principal directions of the space effort. Missions include reconnaissance from and in space, early warning of nuclear missile attack, satellite communications, navigation, and weather reconnaissance. Within the next few years the Department of Defense, using the STS, intends to deploy in space the satellites of a new strategic communications system, a global navigation system, ballistic missile launch early detection satellites, and military weather reconnaissance system satellites.

The Pentagon attaches particular importance in this plan to utilization of the STS for intelligence gathering purposes. According to Air Force spokesmen, this mission should continue "in the future as a paramount national program." In particular, the journal SCIENCE pointed to the possibility of effective utilization of the STS to maintain direct surveillance of crisis areas and the scenes of local military conflicts. So-called tether systems are being designed for this purpose. There appeared in the press a report about the possible development of a TS satellite (tethered satellite), released on a tether line from the payload bay. The length of the tether is about 100 km, and it is 2 mm in diameter. Unspooling it to full length will take 6-10 hours, and spooling back -- 8-12 hours. The satellite would be designed as a reusable.

The Pentagon considers the servicing and repair of military satellites in orbit, as well as the return of military satellites to earth to be another potential area of utilization of the space shuttle. The remote-controlled manipulator arm can be used for this, as well as spacewalks by astronauts. An individual jet backpack has been developed to provide them with self-contained locomotion capability.

A remote-controlled vehicle is being designed to service space vehicles in high orbit (above STS working orbits). In particular, it is reported that reconnaissance satellites will be refueled with the aid of this device.

The Pentagon is placing great hopes on the STS in the course of designing combat and supporting space systems. Experiments are planned for assembling in orbit large structures, large radars, space reconnaissance telescopes with adaptive optics, passive optical systems for laser weapons, and solar power generating units. There are plans to test an orbital infrared telescope designed to detect and track objects in space, as well as to launch into orbit a "Mini Halo" satellite to test infrared detectors with a mosaic photodetector, capable of detecting rockets and aircraft in flight.

Designs of offensive space systems have been discussed in the U.S. press, in which the space shuttle was assigned the role of nuclear weapon carrier.

Considerable attention is being devoted to utilizing the shuttle to intercept and inspect the adversary's space vehicles. Toward this end studies were conducted on the detection and identification of space objects, capabilities to destroy them, as well as to capture and return to earth in the cargo bay.

The space shuttle is assigned a leading role in development of a large-scale ABM defense system. It is planned to use shuttle craft to assemble, test and service components of the space echelon of an antimissile defense system. The journal MILITARY TECHNOLOGY explains what these plans mean. One variation calls for shuttle craft delivering X-ray and other lasers into orbit, while another variation would have them deliver orbital mirrors to reradiate energy from ground-based lasers. A laser weapon guidance system is to be tested. The shuttle will carry on board an infrared sensor with cryogenic cooling, designed to detect a target satellite, a radar to track it, as well as means of aiming a laser beam at the target.

The U.S. Department of Defense has been authorized to oversee development of improved space transportation systems based on the Space Shuttle, capable of carrying heavier military payloads into orbit. It is believed that a future more powerful cargo-carrying vehicle, the so-called "Super Shuttle," will be able to deliver into low earth orbit payloads weighing more than 100 tons. Another area of research involves the development of small piloted and unmanned spacecraft capable of maneuvering in space. As the Pentagon envisages it, the "Mini-Shuttle" will become such a craft. The U.S. Air Force is planning to develop a space transport less powerful than the Space Shuttle but capable of short-notice launch (approximately 2 hours after orders are received) and able to land at any large airfield. It is anticipated that the Mini-Shuttle will launch from a Boeing 747 heavy aircraft, which will be in a continuous state of takeoff readiness, carrying on board a supply of rocket propellant to transfer into the spacecraft's tanks.

U.S. plans for the militarization of space are closely coordinated with extensive development of the latest offensive weapon systems and further buildup of the strategic nuclear arsenal. The present White House Administration already views military space potential, of which the Space Shuttle is a component part, as practically the fourth component of its

strategic arsenal, alongside ICBMs, strategic bombers, and nuclear-powered fleet ballistic missile submarines.

The military space doctrine being devised by the strategists across the ocean assigns the STS in the immediate future a role not only as a means of transportation but also as an asset directly intended for military operations in space. The Pentagon views space as a potential theater of military operations.

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COLORS FOUND TO INFLUENCE PHYSICAL WORK CAPACITY AT YEYSK PILOT SCHOOL

Moscow AVIATSIYA I KOSMONAVTIKA in Russian No 9, Sep 84 (signed to press 3 Aug 84) p 38

[Article, published under the heading "Military Educational Institution Affairs," by Maj V. Koltunov, head of the department of physical training and sports, Yeysk Higher Military Aviation School for Pilots, and senior instructor V. Ivanov: "Color Climate in the Gymnasium"]

[Text] Various factors exert influence on effectiveness of the learning process at pilot school. It has been noted, for example, that gymnasium classes produce better results if a favorable color climate is created there, defined as the aggregate of the quantitative and qualitative features of a room's color environment.

Usually the colors for painting gymnasium walls and apparatus are selected subjectively or are simply limited to those paints which are available. It has been ascertained, however, that color increases cadets' functional capabilities, improves mood and frame of mind during classes, and fosters successful accomplishment of a broad range of tasks of a physiological, psychological, and emotional character. The effect of color stimuli on the organism of subjects under various physical stress loads was determined. The study provides a picture of the effect of color on the general and specialized physical fitness and functional state of cadets.

By functional state we mean a person's integral reaction to external stimuli which increase one's capacity to work and help one rapidly acquire solid skills in performing various exercises.

Maximum possible physical work capacity, estimated with the aid of a stride test, increases on the average as follows: by 16 percent with red light and by 25 percent with green light, in contrast to activity with ordinary incandescent bulbs. Eye sensitivity increases by 15-23 percent, and pulse rate rises by 8 percent. An increase in rate of movements also is observed (tapping test): by 23 percent with red light and by 19 percent with green light, which can be viewed as a change in motor system activity under the influence of color.

Of much greater interest, however, is the influence of color on a cadet's specialized fitness. Interesting results were obtained on the 360 degree swing (forward and backward rotation). It was established that the average time to complete 10 rotations in red light is 0.6 seconds less than with an ordinary light bulb. No changes were noted with green light.

As we see, green and red colors differently affect neuromuscular activity. There takes place a certain activation of nervous processes, which also extends to the motor system.

External observations by investigators and a conducted survey made it possible to establish that a static light-and-color environment, even if optimally organized, soon loses its positive effect and begins to be perceived by the cadets as a monotonous stimulus. That is, the color climate should correspond to the specific features of muscular activity and change in conformity with physical training tasks. Such a color climate is called dynamic. It can be created by various methods. We, for example, provided special functional zones. The idea on the basis of which they were set up consists in the following. During physical training cadets are placed in a rigorously defined color environment, which constitutes a unique psychophysiological indicator in relation to the tasks being performed. We proceeded from the position that one group of colors (reds, greens) exerts a stimulating effect. They cause the pulse rate to quicken and work capacity to increase. Another group (blues) produces a calming effect. Figuratively speaking, red is perceived as warm, and blue as cold.

In the compressed-air systems room UPS-16T (auxiliary), in which specialized equipment is installed, the floor was painted red, the athletic equipment and apparatus locations were painted green, while the apparatus itself was painted in warm tones. In the main gymnasium the ceiling and upper part of the walls were painted white, while the lower part of the walls was painted light blue. The floor was given a yellow-green hue. The volleyball court surface was painted yellow, and the basketball court green. This had a positive effect on increasing the effectiveness of physical training classes.

The results indicate that color stimuli are extremely favorable for human muscular-motor activity. The influence of red is especially noticeable during speed-type activity. It is advisable to accompany endurance-type physical training activity with green.

We extensively utilize the results of these observations in conducting cadet physical training classes. Following general calisthenics the future pilots proceed with specialized exercises (speed-type activity) in a red-painted zone. They exercise in a 30-40 second sequence with a 1 minute rest interval. Endurance-type activity is performed in a green-painted zone. Duration of the exercise sequence is 1.5-2 minutes with a 1 minute rest interval. The circular method of training is employed in the classes, with student advancing through four "stations."

In our opinion this organization is functionally warranted, since it causes a diversity of impressions when moving from one zone to another and promotes orderly regulation of the training process. Most of the cadets have become

convinced through their own experience that a color environment helps successfully accomplish tasks connected with maximum mobilization of the organism's capabilities.

Following a physical work load, cold color is utilized to aid recovery of the organism's processes. It has been noted that under the influence of cold color the most favorable changes are detected in the nervous, cardiovascular, and motor systems. No such changes were noted with the gymnasium walls painted white.

Thus the color environment exerts a stimulating influence on the psychophysiological and functional state of the central nervous system and a person's general work capacity. A dynamic color climate has the strongest effect during heavy physical work loads. It is also beneficial to cadets with a combination of the above factors with elements of monotony in physical training, in order to optimize the psychological state.

The above method has been employed at our school for three years now in the process of physical training of cadets and school athletic teams prior to Air Forces higher educational institution championships. The athletes are unanimous in their opinion: a color environment appreciably aids in maintaining optimal tone in the entire organism and in increasing work capacity.

The requisite color environment can be created in any gymnasium. Intelligent application of a color climate will make it possible substantially to improve the quality of physical training and the forming in the young cadets of an overall preparedness for many years of flying.

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BOOK ON CZECH BORDER FIGHTER-INTERCEPTORS REVIEWED

Moscow AVIATSIYA I KOSMONAVTIKA in Russian No 9, Sep 84 (signed to press 3 Aug 84) p 41

[Review, published under the heading "New Books," of book "Vysota: Povest'" [Heights: A Narrative] by Y. Kebza, translated from Czech by S. M. Sokolov, Voenizdat, Moscow, 1984, 155 pages, price 1 ruble 10 kopecks: "A Pilot Has One Dream...."]

[Text] Captain Matous's flight had commenced its alert duty shift. It was drizzling outside.

The telephone rang. The captain picked up the receiver, listened for several seconds, and then tersely replied: "I understand!" He then turned toward the hushed pilots, who had already guessed the situation, and said: "Let's move, men!"

Within seconds all four pilots were in their cockpits. Naturally a scramble alert had not been declared for nothing. Somewhere over across the border a group of pilots was also sitting in their cockpits, pilots who probably had received orders to overfly the neighboring country's territory. And that cannot be called anything other than an attack.

...Captain Jozef Matous spotted the target. "Teardrop cockpit, spindle-shaped fuselage, flattened oval air intake." Matous squinted in surprise. "F-100A Super Saber! One of the latest models," he thought to himself and advanced the throttle. For the moment the Saber pilot suspected nothing. Matous could see his white helmet rocking from side to side.

"Could he be nervous?" the captain mused. "Young? Hardly; they wouldn't send a boy on such a mission. He is probably not in communication with his command post. The radar across the border is not reacting. It does not see us.... Aha, he spotted us!"

The shadows cast by the MiGs struck the sharklike fuselage of the intruder fighter. The pilot instantly raised his head, and Matous was able to note that his face was not young. "Much worse," he thought to himself. "He probably has combat experience."

But there was no time to ponder the matter. He added throttle, overtook the intruder fighter and rocked his wings: follow me!

He was counting on the pilot of the Saber being able to evaluate the situation quickly and correctly and responding in an appropriate fashion. He would not take a foolish risk. It is impossible, however, to predict anything in advance in such a situation. The foreign pilot was flying over territory with which he probably was unfamiliar, and in addition the ground was hidden below several cloud layers. He was without communications. He could make a safe landing only by following the Czechoslovak aircraft. He was in a situation where staying alive was the most important factor.... But perhaps this was merely a ruse: he was pretending to be lost. And he would continue to make that claim when he was brought down: try and prove otherwise!

Matous decided to move in closer. Now the Saber was only a few meters from him. Soon they were below the cloud cover, embraced by the murky light of an overcast autumn day. Thin rivulets of rain once again began streaming across the cockpit glass. The captain hung on the intruder's tail until they had descended to a height of 20 meters. Perspiration beaded his forehead from the tension -- this was the most critical phase of the operation. He kept a close watch on every movement of the border intruder. When Matous was fully convinced that the F-100A would be unable to escape, he passed the intruder aircraft and, climbing, entered the pattern. The captain left the Saber in Slezak's care. He knew that the latter would do what was necessary. Radek was positioned 300 meters from the American fighter, in a position immediately to intervene if necessary.

But it was not necessary. Crossing over the airfield, Matous saw water splashing up from the landing gear of the F-100A. The pilot had begun applying hard brakes.

Everything was in order. Mission accomplished.

The above is one of the incidents described in Jozef Kebza's "Heights," recently published by Voenizdat. The book is dedicated to the pilots of the Czechoslovak People's Army who, standing shoulder to shoulder with the fighting men of the nations of the socialist community, are guarding world peace. The action takes place in an aviation regiment stationed on Czechoslovakia's western border.

The author describes in a fascinating manner, using interesting examples, the smoothly-coordinated fighting team and men who are outstanding in their human qualities, bound together by true friendship, staunch, ideologically convinced first-class pilots, dedicated defenders of their homeland, ready and willing at all times to repulse an aggressor.

Chock-full of interesting stories, the book reads easily and without question will awaken reader interest.

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JOURNALIST DESCRIBES BOMBER MOCK COMBAT SORTIE

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[Article, published under the heading "Be Alert, In a Continuous State of Combat Readiness," by Col G. Spiridonov: "Tracers Strike the Target: Report From On Board a Long-Range Bomber"]

[Text] Our aircraft, its jet engines roaring, was sundering the infrequently-encountered clouds at this altitude. [Accompanying photograph shows Tu-16 "Badger" bomber]

"This is 075, over 30!" sounded the muffled voice of the aircraft commander.

ATC immediately replied: "Roger."

The aircraft had passed another waypoint. It was cleared to another flight level. The bomber began a smooth descent. The turbines altered pitch. We were crossing the "line of contact." The crew was now more alert: at this point they could encounter "aggressor" fighters. They had to be prepared to repel a fighter attack. But the air situation was quiet for the time being. And the aircraft was steadily drawing closer to the target....

The long-range bomber's crew included aircraft commander Gds Capt Viktor Khodatskiy, instructor pilot Gds Maj Aleksandr Voronkov, navigators Gds Sr Lt Viktor Klautsan and Gds Capt Aleksey Garanin, and aerial gunner-radio operator Gds WO Mikhail Gomenyuk. Each was busy at his job.

The crew had been assigned a difficult mission. "Aggressor" ground troops had shifted to the defense. Covering the "battle line" with antiaircraft missiles and setting out additional air warning posts, they commenced an unobserved redeployment of forces. A group of our long-range bombers, which included Guards Captain Khodatskiy's crew, was assigned the mission of reconnoitering the "aggressor" forces, after which they were to deliver a "strike" on the fighter flight line at an airfield adjacent to the "front." The plan called for executing each element of the mission at different altitudes. At the mission briefing the regimental commander had warned that a change in weather en route was expected, and therefore the crews had to be prepared to

use not only the main systems but also the backup systems, aiming and radar gear.

During the preceding flight operations shift, unexpectedly deteriorating weather in the area of the range hindered the conduct of live firing with the aircraft cannons. Naturally mock firings took place, and the cameras recorded accurate target "hits." Nevertheless the results failed to give the aircrews moral satisfaction. Some of the fliers made mistakes, one violated radio communications procedures, another forgot promptly to radio to the ground information on en-route weather, and some deviated from the designated route. The commanding officer analyzed the mistakes in detail and instructed that they not be repeated.

In the classroom where the briefing took place there was a poster displayed, the text of which went as follows: "Pilot, remember! An abrupt rearward movement of the controls at high altitudes and Mach numbers and establishment of an above-critical angle of attack caused buffeting and stall of the aircraft flown by Captain Yermachenko and Lebedev, Major Gostev, and Senior Lieutenant Gasyul'!" This reminder compelled the aviators to reread the appropriate documents and the pilot's instruction manual.

A news sheet was displayed alongside the poster: "The men of our squadron warmly congratulate Gds Sr Lt V. Shemyakin on his first sortie as pilot in command. We wish him future success in his flying!" One could sense that a successful accomplishment by a young guardsman pleased all subunit personnel. Commanders carefully and thoroughly prepare young personnel for each training sortie. Instructors include in the program of immediate preparation scenario instructions in case of occurrence of unforeseen circumstances. In addition, unanticipated situations are planned for.

And now, just prior to the mission, the crew of Gds Capt V. Khodatskiy was informed of a scenario change: the copilot and second navigator had become "disabled," and their places would be taken by officers A. Voronkov and A. Garanin. The commander responded unenthusiastically, to put it mildly, to the news that a journalist would be flying with them in place of Gds WO Nikolay Tureyskiy, an aerial gunner 1st class. His attitude was understandable: his was a young crew, assembled only recently, men who had not yet really become broken in and did not yet understand one another without a word being spoken. For them each training flight was worth its weight in gold, particularly since the crew was seeking to earn a rating of excellent. But orders are orders....

We had been over "enemy" territory now for more than an hour. The long-range bomber was constantly varying altitude and heading. Viktor Klautsan had already penciled his first entries in his notebook on the location and operating modes of the opposing force's radar facilities. One target had already been "destroyed," but there were as yet no fighters in evidence. Nevertheless the crew members kept alert. It is not easy to be in a continuous tense state.

It was getting hot in the close-quarters armored gunner's space. The fan was little help. The stream of air from the fan was trying to blow off my lap the map on which I was checking off passage of waypoints.

The only compromise with reality permitted us was to radio the ground on passing waypoints.

"This is 075, over 32!"

"Roger...."

Similar reports were coming in over my headset. The aircraft flown by young officers V. Varvarin, N. Studitskiy, V. Shemyakin, K. Buzenkov, V. Konovalov, and A. Tkachuk, precisely maintaining mission configuration, had crossed the waypoint. Nobody had wandered off track, in spite of the fact that the terrain was lacking in prominent landmarks. Endless steppe stretched out in all directions.

What sights this region had seen! It was in this region that in far-off 1920 Red Cavalrymen were saber-hacking White Guardists Denikin, Mamontov, and Makhno's bandits. In this region during the war years this regiment's pilots, flying combat Ilyushins, were pounding the fascist occupation forces. This military outfit has produced 29 recipients of the Gold Star, including twice Hero of the Soviet Union V. Sen'ko. The regiment was given the guards appellation for courage and valor displayed by its men in the performance of combat missions, and a military decoration adorned its colors.

The tradition of courage and glory of the famed veterans is today in reliable hands. The regiment's present generation of aviators is carrying on the tradition with honor and dignity. They include young party member Viktor Khodatskiy. He flies his heavy aircraft with confidence in adverse weather and hits ground targets with accuracy. He is a proficient and strong-willed leader, a concerned and responsive comrade. He has the ability to maintain within his crew an atmosphere of kindness and mutual respect, and he has quite a sense of humor. Viktor is a soccer player and cross-country runner, tough and physically fit.

First navigator Viktor Klautsan has equally fine qualities. His room is crammed with radio receivers and various instruments. His enthusiasm for radios is helping him thoroughly master the design, construction and operation of aircraft avionics gear. The navigator brings the bomber on target precisely at the predetermined time and expertly performs the calculations for bomb release and flying the aircraft on unfamiliar routes.

Gds WO Mikhail Gomenyuk is the finest specialist in the squadron. He is invariably named one of the socialist competition winners. Mikhail totally loves his job and can work with equal proficiency as radio operator and gunner. He is a master proficiency-rated member of the Air Forces and on many occasions has displayed resourcefulness at a difficult moment.

I was told that once during a tactical air exercise the bomber was suddenly attacked by a fighter while out at sea. Gomenyuk promptly spotted it and alerted the pilot. The aircraft had scarcely positioned itself for attack when the guards warrant officer reported over the intercom: "Skipper, turn left 20, bank...."

The MiG playing the "aggressor" shot past, unable to turn with the bomber. He set up for another attack pass, and again: "Right 30, bank.... Stop! Left... degrees...."

Once again the attack was thwarted. This continued until the fighter was low on fuel. When they finally disengaged, they noticed that during the evasive maneuvering the bomber had turned almost 180 degrees. It was immediately returned to its original heading. The umpires gave the crew the highest grade for their skilled actions.

Warrant officer Gomenyuk was faced with just as tough a test on our training sortie. Long before we reached the target dark, moisture-laden clouds enveloped the aircraft. We were approaching the target at extremely low level. And only experts can handle aiming with a large angular displacement.

The squared patterns of plowed fields, small lakes, and river bends flashed by with kaleidoscopic speed. The engines were operating at full power, and the fuselage of the mighty bomber was lightly vibrating. It was as if the aircraft could sense the approach of that culmination moment which would determine the mark to be given for the mission. But the men were cool and composed. One could not sense in the smooth control movements that tension which sometimes arises when flying an aircraft close to the ground.

The most critical moments were beginning. We listened intently to the radio, endeavoring to determine whether the range officer had cleared all the aircraft ahead of us to deliver live fire or whether they were being "waved off." Khodatskiy gave the order: "Radio operator, gunner, prepare to fire!"

"Roger."

No wonder Gomenyuk had perspired during the premission briefing. I don't know how he managed to squeeze into the gunner's space, where it was tight quarters even for one person. He showed me and then made me run through several times the operations procedures sequence. Finally I was flawlessly locating and actuating the fire control switches, releasing the sight catches, and framing the reference points with luminous dots. Now I readied the weapons within a few seconds.

The ground was swiftly flashing past the aircraft, but the navigator's position reports seemed to becoming even more rapidly: "Skipper, 22 to target... 20... 15.... Hold it! Speed.... Right on the marker...." Finally: "2 to target, one and a half, zero five.... target!"

As had been agreed at our premission briefing, Gomenyuk and I pointed the barrels of our rapid-fire cannons in advance downward and to the left. For a brief instant the silhouettes of runways and outlines of aircraft flashed under the fuselage. We pressed the firing buttons. Fiery dashed lines of tracers tore up the dusty "flight line," raising splashes of dirt. The cannon fire rattled the aircraft's skin as if a car was being dragged across cobblestones. The target now lay behind us. The pilot was making every effort to get out of the area as quickly as possible. The experience of the

last war taught us that enemy fighters would set up ambushes not only as bombers were approaching the target but also as they were leaving it. Those aviators who allowed themselves to relax their vigilance paid a heavy price.

Naturally everybody wanted to know how we had done. "Not bad," Warrant Officer Gomenyuk reported over the intercom. His report was cause for general rejoicing. But the pilot warned: "Everybody get your oxygen masks on!"

This brought us back to reality -- the mission was only half accomplished, and there should be no complacency. One by one we reported execution of his instructions. I observed on the indicator overhead how the diaphragm opened as I breathed in; it reminded me of human lips. This was not an unnecessary precaution. Although the aircraft was pressurized, anything could happen. There have been cases where depressurization has occurred due to carelessness on the part of crew members, resulting in oxygen starvation. The outcome was not good....

Within a few minutes we were above the clouds. I gazed at the setting sun. At this point navigator Klautsan reported: "Jamming initiation point reached! Turning on jamming gear!"

Now our aircraft, even if it had been detected by ground tracking radar, was concealed by jamming. Utilizing onboard equipment, we proceeded to carry out the next part of the mission -- radar reconnaissance....

We landed with our landing lights on. On the ground it was already dark. Only now did I begin to feel how my muscles had grown numb from lengthy sitting in the same position. The airfield air seemed strange indeed. One did not simply breathe it in but drank it down like water from a cool spring.

Everybody was in a good mood. Guards Major Voronkov and Guards Captain Garanin, as instructors, were pleased with the crew's high degree of proficiency. We received confirmation that the crew had earned a mark of 5 for its gunnery. Khodatskiy, after briefly summarizing the initial performance results, announced: "Everybody to supper. Don't dawdle. We'll be going out soon...."

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COSMONAUTS OBSERVE VORTEX FEATURES IN WORLD OCEAN

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[Article, published under the heading "The Space Program Serving Science and the Economy," by V. Isakov: "Vortex Features in the Ocean"]

[Text] The Arctic was once called a weather "kitchen." A determining role in formation of weather, however, was attributed to processes taking place in the atmosphere. Today it is generally acknowledged that the behavior of the atmosphere in turn is determined by the World Ocean, and precisely for this reason it is drawing so much scientific attention. It is believed that temperature fluctuations in the upper layers of the ocean play a particular role in long-term weather changes. Academician G. Marchuk, for example, validated the concept of key regions of the World Ocean which influence our planet's climate to the greatest degree. Interesting studies have appeared in recent years, which would have been impossible to conduct without data obtained from space. The opening up of regular air service to remote localities in the Soviet Union, intercontinental flights, development of maritime transport and the fishing fleet -- all this evokes the need to obtain complete information on the hydrometeorological situation and its changes on a global scale.

This article discusses visual observations of the World Ocean made from the Salyut station.

The World Ocean is vast. It presents various aspects when viewed from the Salyut station. Directly below it may appear gray-green, but if one slowly shifts one's gaze sideways, the water surface displays an entire range of hues. The space program has provided the capability to link together the separate parts of a complex picture and to view as a unified whole the constantly changing ocean, which is in continuous motion. Of course spaceborne methods and means of studying the ocean do not replace but supplement the oceanographers' existing technical arsenal. The crews of

orbital stations provide them with highly valuable, and sometimes unique scientific information on the nature and present living activities of the World Ocean.

The cosmonaut-investigator has extensive capabilities in the area of visual observation. He records the direct characteristics, shapes and states of natural features even in conditions of poor brightness and color contrasts. This is due to the high sensitivity and resolution of the human eye -- the most sensitive instrument for observations in the optical frequency band. In conditions of an extended space mission, the visual analyzer retains its advantages over other systems of observation. Under favorable conditions of lighting and angular dimensions of natural features of 10-20 seconds, the eye is capable of distinguishing contrasts as small as 1-2 percent. Let us compare: photometric methods are capable of recording contrasts exceeding 10-15 percent, and telemetric -- 20-25 percent. Thus the fullest description of color and brightness contrasts of ocean features is achieved with visual observations. This is why they not only play an important role in the collection of current information on the state of the ocean surface but also serve as a source of verification and standard data for deciphering and interpreting information obtained from instrumental measurements of brightness fields taken from unmanned satellites.

Of particular interest among the various phenomena observed in the ocean by cosmonauts are synoptic vortices -- relatively independent dynamic features with more or less circular water movement. They develop in the top layer of the ocean, ranging in thickness from several hundred to 1-2 thousand meters, and are detected primarily on the basis of color and brightness contrasts. The latter serve at the same time as an indicator of the dynamic activity of vortex features and their direction of rotation.

Systematic visual observations of vortex features in the ocean were begun by cosmonauts Yu. Romanenko and G. Grechko in 1977-1978. Subsequently similar observations were conducted by all missions, the crews of which underwent special training.

These vortices, which vary in shape of involution, are of an astoundingly large scale. Yu. Romanenko and G. Grechko, for example, spotted in the area of the Falkland current a frontal-type vortex 50-100 kilometers in diameter. It stood out on the ocean surface by its greenish hue. At a distance of approximately 200 kilometers from it they noted a vortex of opposite direction of rotation (anticyclonic), the water mass of which was of a deep blue color.

What is the reason for the difference in color? In cyclonic vortices deep water rises to the ocean surface. This creates favorable conditions for intensive growth of biological productivity, which gives the area a greenish hue. The picture is quite different in anticyclonic vortices. In the center of such a vortex the surface waters plunge to depth, which is accompanied by decreased bioproductivity.

Important results obtained by cosmonauts V. Kovalenok and A. Ivanchenko made it possible to devise a method of visual observations taking into account angles of illumination and sighting of natural features in the ocean. In

particular, it was established that the best conditions for searching for and spotting vortex circulations are presented when the sun is at an angle of about 25 degrees to the horizon, both directly in the zone of the solar path and within an area of 20-25 degrees to the right and left of it.

V. Lyakhov and V. Ryumin discovered in 1979 that there are as many anticyclonic and cyclonic vortices in the World Ocean as in the atmosphere. It was ascertained that many oceanic fronts engender vortices. The latter in turn frequently create fronts, altering horizontal temperature, salinity, and density gradients by their deformational field. The Kuroshio [Japan current] front, for example, was detected on the basis of a grayish-brown to brown band stretching up to 500 kilometers, and two days later a vortex developed in this area. It reached 450 kilometers in diameter. The observed area was of a greenish to gray-brown hue. All this is fully in agreement with conclusions on the dynamic instability of the Kuril current-Kuroshio system and intensive vortex formation in their encounter zone.

The crew observed intensive vortex features most frequently in the Gulf Stream and Kuroshio current systems, in those areas where they move away from the coast. For the Gulf Stream this is an area extending from Cape Hatteras, where the current takes a turn toward the northeast, to the southern edge of the Grand Bank. For the Kuroshio current it is an area to the east of the island of Honshu. The vortices, which carry "foreign" waters into the open ocean, are distinguished by a color contrast. In addition, in certain instances one observes cumulus clouds above the boundary of "cold" (cyclonic) vortices, which can serve as an indirect indication of these features.

Vortex discontinuities visible on the ocean surface from space can vary in horizontal dimensions from several dozen to several hundred kilometers. They are extremely variable in shape and only in certain instances are in the form of a circle, ellipse, or oval.

V. Lyakhov and V. Ryumin repeatedly observed spiral structures of synoptic vortices in the Pacific, east of the Kamchatka coast. It was established that cyclonic current meanders (bends) have regular rounded configurations and persistent contrast, while advective tongues (formed as a result of transport of foreign water under the effect of wind) of cold waters curl in one direction or another. Their ends are frequently tapered down. Contrast gradually diminishes in the direction of the tapered part of the tongue.

Frontal interfaces themselves engender vortex disturbances due to their own instability. A certain relationship between vortex fields in the ocean and cyclones in the atmosphere was confirmed by observations made by L. Popov and V. Ryumin in the North Atlantic. Oceanic vortices are just as frequent as atmospheric cyclones and anticyclones. A large part of the kinetic energy of our planet's hydrosphere is concentrated in them.

On 21 June 1980 the crew spotted the main current of the Gulf Stream on the basis of brown bands and a series of emerald-color patches. It essentially comprises a frontal zone approximately 250-300 kilometers wide. Its northern and southern boundaries were distinguished by green strips up to 800 kilometers in length. The following day a front extending as much as 400

kilometers was noted in the eastern part of the frontal zone. Its color smoothly graded from northwest to southeast from turquoise to brown and from brown to pale green. The front's color did not change during the period of observations.

On 25 June the cosmonauts observed a cyclonic vortex approximately 50 kilometers in diameter in the area where the frontal interface graded to pale green. The area was distinguished by its greenish-brownish hue. L. Popov and V. Ryumin observed that the vortex showed a tendency toward increase in horizontal dimensions.

On 28 June the target area of ocean was obscured by solid cloud cover. This precisely ties in with the existence of interlinkages between vortex fields in the ocean and cyclones in the atmosphere. Their interaction determines in large measure the nature of general atmospheric circulation, which plays an important role in forming the earth's weather and climate.

Factor integration, that is, the capability to observe and record several phenomena, is characteristic of visual methods of oceanic investigation. This makes it possible to utilize obtained information for simultaneous study of the physical processes taking place in the ocean and atmosphere and their interaction. Establishment of the factors involved in formation of cyclonic and anticyclonic meanders on frontal interfaces of the most diverse scale can serve as an example of this. V. Kovalenok, for example, reported during a communications session: "I am observing clearly-marked dynamics and a frontal zone, with cyclonic and anticyclonic meanders on the frontal zone boundaries. A weak current runs along the frontal zone. The zone extends about 300 kilometers and is approximately 100 kilometers wide. Along our track I can see an amorphous green at depth in the form of individual streaks."

The large observed area from the vantage point of the orbital station, in combination with the high contrast sensitivity of the human eye, makes it possible to conduct fairly detailed studies of the surface structure on a regional and global scale. There is a capability to observe not only the process of vortex formation but also to monitor its variability. All this opens up the way to conduct regular mapping and forecasting of vortices, which is of great importance for evaluating the hydrologic situation in a given region. In the final analysis these studies make a contribution to the development of more sophisticated methods of weather forecasting in coastal regions and deep in the continental landmass.

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SQUADRON MAINTENANCE ADOPTS INNOVATIVE TECHNIQUES

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[Article, published under the heading "Know-How of the Best Into the Combat Arsenal," by Gds Maj V. Yeliseyenko, squadron deputy commander for aviation engineer service: "Adopting Advanced Methods"]

[Text] The attention of every person entering our subunit's maintenance building at the airfield is drawn by a slogan. It contains in a concentrated expression the main goals toward which squadron aviation engineer service personnel must work. One of these tasks is to ensure a high degree of aircraft reliability and combat readiness.

High reliability. As we know, it is determined by many factors, including precise observance of the appropriate aircraft servicing and maintenance manuals and documents, and constant increase in the technical knowledge and skills of aviation engineer service specialists. An important role in ensuring proficient servicing and maintenance of modern aircraft systems is played by continuous, persistent search for and adoption of advanced work methods, initiative and innovativeness by the personnel involved, for no document which contains the basic requirements on care and maintenance of combat equipment can specify literally everything which squadron aviation engineer service personnel encounter. Here too, as experience indicates, a great deal depends on people's initiative, their ideological and moral-psychological conditioning, and a profound understanding of the role of man and machine in modern warfare.

Recently we have begun approaching organization of specialist technical training in a more exacting and stricter manner. In the process of reequipping training facilities, for example, we take into account such factors as the effectiveness of the display stands and equipment as well as various visual aids.

As we know, a good deal of time and resources are expended on their preparation. Not everything that has been created by the squadron's innovators and clever craftsmen, however, has been extensively utilized or, most important, produced benefit. Therefore there was little use derived from such "innovations." We must admit that they were infrequently utilized to

display to various inspection teams, but not in the interests of further improving methods and helping to increase the technical knowledge and skills of aviation personnel. But it is also very important to determine the value of a given display stand, which occupies considerable space in a classroom, for the main thing is that an innovation not be nothing but an exhibit, but should benefit aviation engineer service personnel, so that the men can knowledgeably work with the most complex gear and equipment of today's aircraft.

This is why the discussion agenda at party and Komsomol meetings as well as meetings of the unit methods council technical section included the matter of teaching specialists not only in the classroom but also out on the airfield. Naturally that is not so simple. But practical realities have forced us to revise a good deal. Otherwise it is impossible successfully to accomplish the complex aggregate of tasks assigned to squadron personnel.

First of all we set for ourselves the task of increasing the potential of each servicing group. We tried to inject into their activities a spirit of innovativeness and dissatisfaction with achieved results, and we launched a campaign aimed at ensuring that each and every aircraft ramp position, each and every classroom, and each and every work station become a model of efficiency. It was not easy to change their countenance and to give them a maintenance-oriented directional thrust. For this we would have to devise and implement a number of diversified measures. And in order to implement our plans, to turn them into reality, it was necessary to mobilize the men, to ignite the spark of inspiration in their hearts.

I shall be frank. Some maintenance specialists still reason approximately as follows: we are doing a decent job of readying aircraft for flight operations, and the aircrews are not lodging any particular complaints. Therefore should we burden ourselves with extra concerns? But those who think in this manner are rejecting that which is promising, failing to look to the future, ignoring new phenomena. And yet everything of a vanguard and progressive nature born in the classroom, at the work station, and on the flight line inevitably acquires strong wings later on the airfield and during performance of missions in the air and on the range by the aircrews.

It is impossible, however, to adopt all the best new innovations without thorough search and efficient utilization of one's work time. There was a time when we were criticized for paying insufficient attention to equipping work stations. And this criticism was warranted. As we know, the quality of work performed by the aviation engineer service specialist depends on the content of his work station.

We have done a great deal of work to improve the accuracy characteristics of all aircraft systems. Flight personnel, engineers and technicians took active part in this work. We also had to think about how to keep tabs on such measures. For this purpose a group of officers was instructed to prepare a log, in which we now keep records on all parameters of bomber systems and equipment during performance of routine maintenance and other preventive maintenance procedures.

The avionics servicing group headed by Gds Capt D. Aksenov has been a socialist competition winner for years now. At his initiative a work station was set up which contains everything needed to repair aircraft equipment: special temperature control equipment, a methods manual on making aircraft equipment serviceable, various diagrams and technical charts, as well as a safety manual. This vanguard officer maintains a workbook. In it he enters the day's personnel work schedule, keeps close tabs on how the group's specialists use their time in the process of immediate and preflight preparation of aircraft for flight operations, in the course of servicing day, and also jots down problems noted in the course of checks and inspections and specifies how to correct them.

Intelligent management can be seen everywhere: in the contents of the work stations, a high degree of proficiency and efficiency by the maintenance specialists, and precise observance of all documents and manuals governing proper aircraft maintenance, for work proceeds rapidly and smoothly if everything needed is always available and on hand. And how much time is saved! It is no accident that more than half the specialists in party member D. Aksenov's group are master proficiency-rated.

The squadron aviation engineer service command post also plays an important role in successful maintenance of complex equipment. They have everything they need here for productive work performance by the maintenance specialists: technical charts and schedules for all types of aircraft equipment preparation, a list of airframe and powerplant assemblies, systems and components without inspection of which groundcrews may not release an aircraft for flight operations. Chart boards are made up very nicely. They contain a listing of the duties of aviation engineer service personnel pertaining to organizing and conducting aircraft inspection. The aviation engineer service command post has charts indicating bomber hours logged, component replacement schedules, powerplant maintenance schedules, schedules for performing routine maintenance procedures, and aircraft inspection by squadron aviation engineer service supervisor personnel. It also maintains files containing the men's work plan-schedules for the year, charts for breaking in new aviation engineer service personnel, and materials on organizing maintenance days and inspection of airfield technical service and maintenance equipment and facilities. We also maintain at the aviation engineer service command post a log which keeps a record and analyzes squadron aviation engineer service work performance in the process of aircraft maintenance and a log containing the requisite calculations, which aviation personnel extensively utilize during tactical air exercises.

The aviation engineer service command post is situated in the vicinity of the flight line, where personnel spend most of their working time, performing difficult tasks connected with servicing flight operations and readying modern aircraft systems. As a result both maintenance specialists and aviation engineer service supervisors are pleased. Now there is no need for technicians and mechanics or servicing group chiefs to turn to the unit area-specialization engineers for consultation or advice or to leaf through voluminous files containing documents and bulletins on maintenance procedures on complex aircraft. Maintenance specialists are assisted by various charts, diagrams, working-model displays, and other materials. They are always at

hand. Therefore these training aids are very useful. In addition it saves time both for supervisors and subordinates.

Nor should we ignore a situation where an officer wastes time and energy on looking for and acquiring, for example, building materials (plywood, paint) and paper needed to equip a squadron training facility, although in most cases support subunits are accommodating and endeavor to fill requests to their best ability. A great deal depends on mutual understanding and coordinated actions. This helps successfully accomplish tasks pertaining to further improving classrooms, aircraft ramp positions, laboratories, and aviation engineer service specialist work stations.

A substantial contribution to this important business has been made by Gds Sr Lts S. Afanas'yev, P. Sinkovets, and V. Skorobagatyy, Gds WOs V. Aleshichkin, A. Khopaylo, B. Bondarchuk, V. Malyshchik, and others. They understand that uniquely set-up learning aids, classrooms, and combat equipment locations are not only coefficients of aircraft high operational reliability on the ground and in the air but also reserve potential for further increasing aviation personnel job proficiency.

We regularly hold review-competitions for exemplary aircraft ramp position and work station and for the title of best maintenance specialist. They help develop initiative and innovativeness, inject a spirit of competitiveness and motivation, and develop a solicitous attitude toward and affection for the aircraft. It is no accident that many squadron aircraft ramp positions are maintained in good condition and are a pleasure to see. Specialist 1st Class Gds Capt Yu. Kuznetsov is a frequent competition winner. The aircraft ramp position in his care is always in an exemplary state.

Little time remains to completion of the summer training period. The current training year ends at the same time. But there are no respites in military labor. Therefore our personnel are already addressing new concerns. Clearly aware of their great responsibility to the socialist homeland, aviation personnel do not forget for a single moment the actual military danger presented by imperialist forces. Our squadron's personnel are aggressively continuing the campaign to increase the intensity of military labor, thoroughly, to master weapons and equipment, and to increase their military skills. Aviation personnel greeted with profound satisfaction the CPSU Central Committee decree entitled "On the 40th Anniversary of Victory by the Soviet People in the Great Patriotic War of 1941-1945." The victory achieved on the battlefield by their fellow soldiers and the lofty title of guardsmen places great demands on us and inspires us to new deeds in boosting combat readiness.

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